Macworld

6 PHOTO PRINTERS TESTED AND RATED

MORE NEWS, MORE REVIEWS

EXCLUSIVE! PREVIEW OF OFFICE 2004

iLife '04

Tune into Apple's GarageBand:

Tons of top tips from David Pogue

Also, tutorials on iPhoto 4, iMovie 4 and iDVD 4

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MARCH 2004

- iBook G4: special speed tests
- OS X Panther Server
- Sync your Mac contacts
- Halo: How good is it?
- Loopy music tips
- Stop-motion animation

NO CD? PLEASE CONSULT YOUR NEWSAGENT

The humble, nay deadly boring, battery is the sexiest thing in media chat this year.

Simon Jary
editor-in-chief

Assault on battery

There's an advert on the telly where an attractive dinner party guest is sat next to a lank-haired nerd. You don't need me to tell you which one is the woman and which is the man. In general the nerd is male – and rarely in the presence of women, except his mum and a cardboard cut-out of Lieutenant Uhura from Star Trek. Of course, this generalization is grossly unfair and will insult at least a small percentage of Macworld readers. My apologies, and sympathy, to you all.

Nerds, unlike geeks who can be interested in many things, are obsessed with one particular aspect of life that no decent person would want to even have to think about. Someone who's geeky about one thing is probably geeky about half a dozen completely unrelated other things.

In the TV ad, this chap's obsession is bacteria. The other guests at the party must have been equally gruesome as it isn't long before the woman is gripped with excitement at the germ-nerd's bacteria lecture. A follow-up advert has the two bumping into each other in a café, and things look promising for a blossoming relationship even though he's wearing an anorak in the blazing sunshine.

Bacteria are clearly interesting enough to pull women. But would he have won the girl if he'd been interested in a specific area of computing? If he'd been a programmer, his only hope of scoring would have been a bunch of Microsoft shares or part ownership of Google. Processors and hard-drives would have surely taxed the patience of his fellow diners (although when I'm at a party I'm often waylaid with questions about what new Macs are coming out, how to fix jammed printers, etc), but imagine if he'd been a know-all about something for which there are few more dull subjects. The battery is surely one of the most boring things that we use many hundreds of times a day. They're so boring, we talk of them only when they run out.

And yet the humble battery is currently the focus of a fierce media debate, and Apple is at the centre of the storm. The bad-guy that's causing all the heat is the power inside the iPod. Although rechargeable, the iPod battery has a limited lifespan. It turns into a lump of dead white plastic and slightly scuffed metal after just a year and a half, scream the worriers.

Several national newspapers carried the story, and the iPod got hammered on TV and radio. After all the positive press, the iPod's rabid hype was most definitely being strapped to a stake and given a severe backlashing. Just when you thought the furore over a battery couldn't get any louder the topic was debated in the House of Commons. This was getting ridiculous.

Apple remained fairly calm throughout this deluge of cell-fuel criticism and doom mongering – although I imagine that the public-relations department was having kittens. The company quickly offered iPod owners experiencing reduced charge on their battery the chance to replace their battery for £79, as the main criticism was that a dead battery can't be swapped out like you would when your watch runs down or camera stops clicking.

The 18-month scare is hotly contested by Apple, which claims that it has received very few such complaints. "The battery could quite happily go on for five years," it says.

I've owned three iPods since their introduction in 2001. The 5GB model is still going strong, and is in regular use. When we polled visitors to Macworld Online, 70 per cent of 1,047 readers polled said that they haven't experienced any reduction of battery life. One problem is the iPod's pessimistic battery-charge indicator, which often gloomily predicts the loss of power well before your headphones go quiet. Sometimes it takes a song or two to realize it's on.

What amazed me was the ignorance that people showed about batteries and power in general. Do they really expect a battery to last forever? If batteries – essentially small cans of chemicals – never ran dry the cities of London, New York and Mexico City would simply run on several billion of the things kept in huge hangers outside light-industrial estates. We'd never again need to drill for oil, mine coal or pipe gas. We could forget about harnessing the power of waves, wind and sun. Sadly, like everything on the planet, batteries run out if you keep using them – actually, they stop working even if you don't use them.

A lithium-ion battery provides 300-500 discharge/charge cycles. It prefers a partial rather than a full discharge. Frequent full discharges should be avoided. Instead, you should charge the battery more often. Unlike with nickel-based batteries, there's little concern of memory performance deterioration – whereby the cells forget how much power they could carry through repeated fractional charging. That said, there is such a thing as "digital memory" where short discharges with subsequent recharges don't provide the periodic calibration needed to synchronize the fuel gauge with the battery's state-of-charge. A deliberate full discharge and recharge every 30 charges corrects this problem.

Lithium-based batteries have a lifetime of two to three years. The clock starts ticking as soon as the battery comes off the manufacturing line. Capacity loss manifests itself in increased internal resistance caused by oxidation. Increasing internal resistance is common to cobalt-based lithium-ion. The lower-energy dense-manganese-based lithium-ion, also known as spinel, maintains the internal resistance through its life but loses capacity due to chemical decompositions. Furthermore... Hello? Hello? Oh... **MW**

'If batteries never ran dry the cities of London, New York and Mexico City would simply run on billions of the things. We'd never again need to drill for oil, mine coal or pipe gas. We could forget about harnessing the power of waves, wind and sun.'

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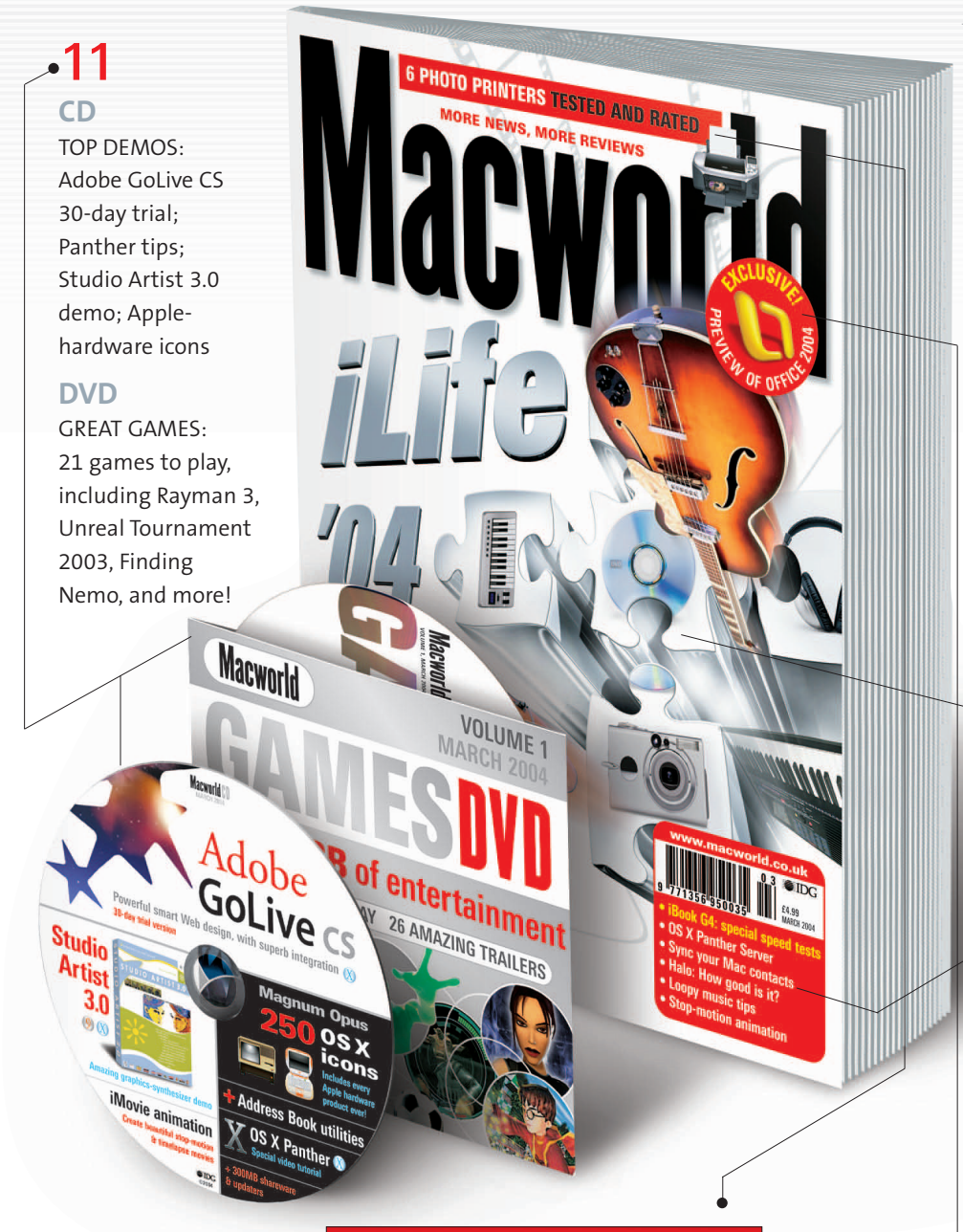
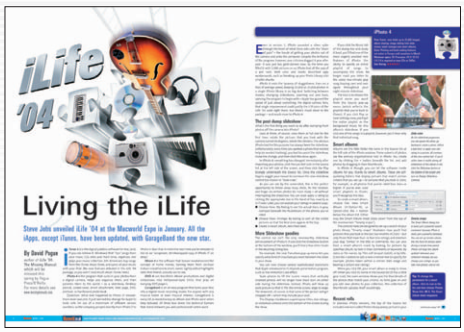
GREAT GAMES: 21 games to play, including Rayman 3, Unreal Tournament 2003, Finding Nemo, and more!





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Apple says "it's like Microsoft office for the rest of your life". Get the straight dope on the brand-new collection of iApps.

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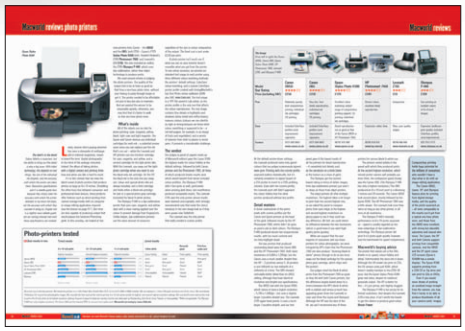
Keep all your contacts organized across devices such as iPods, PDAs, and mobile phones.



50 Photo printers round-up

Six photo-printers are tested and rated in this exhaustive group review.

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Microsoft's new suite of tools has been billed as the best version – on any platform.

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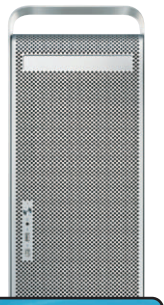
RadTech PodSleevz
These form-fitting cases protect iPods, while allowing the operation of the controls.

BUYER'S GUIDE



183 Macworld's advice for readers buying a Power Mac, iMac, iBook, eMac or PowerBook G4. A full listing of our acclaimed hardware product reviews and group tests for the previous 12 months, with features index and detailed buying advice.

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Now that Adobe has ceased PageMaker development, how do its users convert documents to InDesign if it doesn't support PageMaker's features? Alistair Dabbs reports.

February 20
Nick Spence speaks with Renga Media (www.rengamedia.com), creator of the award-winning Mac-animated feature film, Dominator, made in the UK using Final Cut Pro and After Effects. Are Apple technologies revolutionizing the video and 3D industries?

February 27
QuickTime sits at the centre of MPEG-4 and 3G phone networks. As 3G uptake climbs, what new opportunities exist for Mac users and Apple? How ingrained have Apple technologies become in the telecoms space?

March 5
Paul Resnikoff looks at the battle of the digital-music formats: will Apple win, and how will this affect this burgeoning area? He looks at how firms such as HP support Apple's comeback after years of Microsoft dominance.

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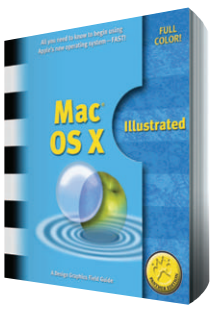

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Your letters win top software each month

Tell us what you think, and you could win a great prize. This month, we reward readers' letters with a copy of Rayman 3 (worth £34.99), the eagerly awaited arrival on the Mac of one of computer-gaming's best-loved characters – courtesy of Softline distribution. Email letters@macworld.co.uk. Please provide full name and contact details or write to: Letters, Macworld, 99 Gray's Inn Road, London WC1X 8TY.

(Letters received without a name and address will not receive a prize.)

⌘ CS upgrade woe

As a user of Corel Graphics Suite and Adobe InDesign 2.0 I was disappointed when Corel announced the cancellation of its Mac version. So I decided that I should find an alternative, and Illustrator is an obvious choice. However, Adobe offers a Creative Suite upgrade only to Photoshop owners.

Considering that InDesign costs more than Photoshop I don't see any reason why an upgrade can't be offered to me. Companies like Adobe complain about cash lost through software piracy, yet they turn away customers who wish to give them money.

Darren Grant

⌘ Thanks for the memory

I recently upgraded from Mac OS X 10.2 to 10.3, which among other features sees the return of labels. I was most impressed to see that it has actually remembered and restored the labels I gave some of my older files and folders that date back to my OS 9 days over a year ago! It hasn't always got the colour right, but even so it's very clever. How did it know?

Paul Keeble

⌘ Resolution resolution

Jim Heid's comments on resolution are misleading for people scanning film [February '04]. Scanning a 35mm slide or negative at 300ppi will give a very small on-screen image of about 390-x-270 pixels. Sending it to a printer at 240ppi will give an image of about 1.4-x-0.9 inches.

Film needs to be scanned at much higher resolutions to give reasonably sized images on screen and paper. It can contain amazing detail, and will stand higher resolution. What's more, scanning at a level higher than that needed for required image size then reducing does a lot to hide grain.

I usually scan film at 1,410ppi then reduce by 50 per cent to get a screen image with a long side of about 900 pixels. If intending to crop heavily I'll scan the selected area at 2,820ppi.

Michael Wasley

⌘ Keep the momentum, Apple

Apple's recent Q4 figures contained a remarkable nugget for UK Mac users: one in six iPods was sold in the UK. Latest IDC figures have also shown a 25 per cent surge in the UK Mac computer market-share. Great news for Apple UK.

Surely these figures will increase the credibility of Apple UK with Cupertino HQ – but will the company follow up its success with more investment – like Apple retail stores? Will it lead to better service from the UK Apple store? Or will it be tempted once more to squeeze every last pound out of British consumers, pricing goods at a hefty premium, like the risible pricing of the iPod mini.

Apple is at an exciting crossroads in Britain. Let's hope it doesn't take the road too often travelled.

Stephen McGann

⌘ Word coding

Many thanks for "Text Massage", on the subject of importing Word text into Quark (February '04) – four pages of pure gold for busy designers. My clients provide all their technical scripts in Word via email, and I have a highly developed vision for spotting missing or substituted special characters.

I probably recovered the cover price of the magazine within 15 minutes of reading the article.

Chris Harland

⌘ Walk in the PARC

Great article on Mac history in your January issue – especially on the early years and the mention of Xerox PARC. If you want to include the origin of the mouse, word processing and graphical windows though, you'll have to go all the way back to SRI and Doug Engelbart in the sixties.

You can see the ongoing documentary about him online at **www.invisiblerevolution.net**, which also features Mac original Bruce Horn.

Frode Hegland

The Joy of Tech™
by Nitrozac & Snaggy
OH DARLING, THIS IS SUCH A SPECIAL ANNIVERSARY...
YOU'RE BEEN MY INSPIRATION, MY EVERYTHING!
I CAN'T TELL YOU ENOUGH HOW MUCH IT HAS MEANT TO ME...
TWENTY WONDERFUL YEARS OF RIPPING YOU OFF!
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⌘ Apples or lemons?

I've been a Mac user for a long time, and the quality of Apple's products has never left me hesitant in recommending them to others, or in ordering thousands of pounds worth of stuff from them.

Unfortunately, it's also led me to delude myself that in the event of problems I could expect quick and speedy resolution.

My iBook recently died two weeks outside its warranty. I booted off the machine in target-disk mode, and tried doing a backup onto CDs using my .Mac-provided Backup. Didn't work. Worse still, I realised that .Mac support is appalling, and after wasting hours trying to resolve the situation have given up on Backup. Fortunately, I have a copy of Retrospect Express.

While I can understand that these things happen from time to time, I've discovered that the issue with the iBook seems to be extremely common. I have had problems in the past with a couple of other machines, but each time I managed to get a speedy resolution within one week.

I'm glad that Apple has seen market improvements in the last couple of years, but I'm now convinced that this has also been accompanied with a huge drop in quality. Unfortunately, I feel like I've paid good money for two lemons (the iBook and .Mac) and am unable to do anything with either! Is it time to switch?

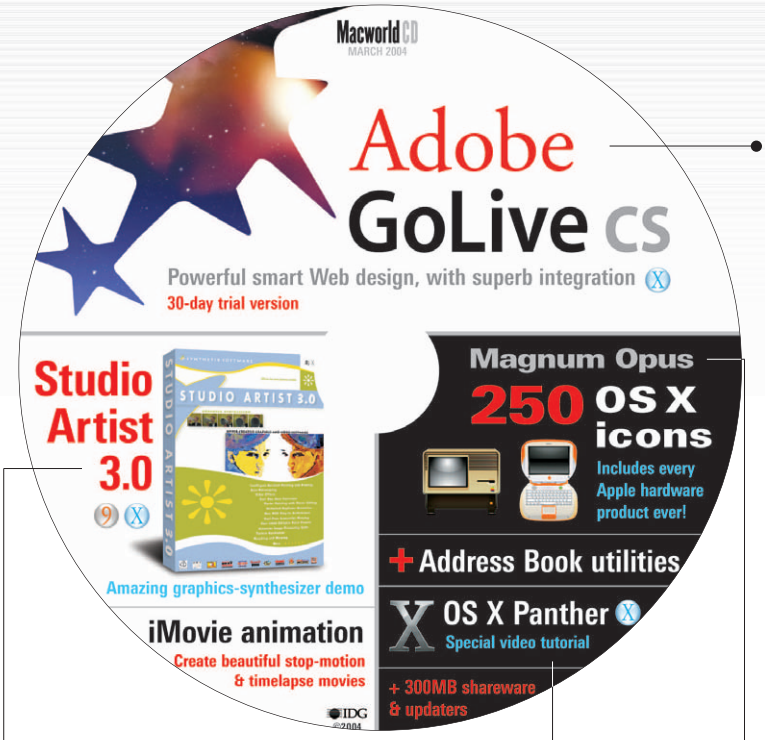
Merul Patel

Macworld.co.uk Join in the live IT debates on Macworld Online Forum (www.macworld.co.uk/forum).

Cover CD1

Work with Adobe GoLive CS for 30 days, and try Studio Artist's new features. Find out more about Panther, hear almost six hours of Inside Mac Radio, and enjoy the Magnum Opus icons. Games, utilities... over to Vic Lennard

MAIN ITEMS



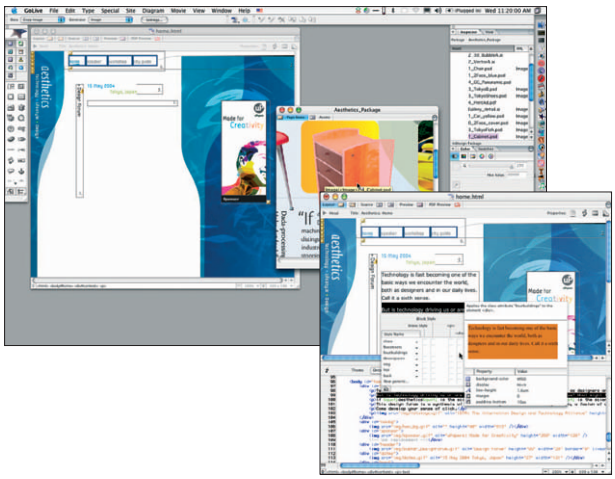
Adobe GoLive CS 30-day trial

Adobe GoLive CS offers integrated tools for powerful Web design.

New features include: Smart Objects – open, edit and place Photoshop, Illustrator and PDF files within the GoLive environment; InDesign support – use XML to transfer a print publication's text and image assets from InDesign; Shared colour management – achieve consistent colour with the common Adobe Color Engine; Advanced PDF integration – create, view and add links to PDF documents directly within the GoLive environment; Visual CSS authoring – true visual CSS Level 1 and Level 2 authoring and previewing provide real-time style rendering and feedback.

Requires Mac OS X 10.2.4 or higher with Java Runtime Environment 1.4.1 and 200MB available disk space.

Try the complete package for 30 days.



OS X Panther tips

Resident Mac guru Chris Breen takes you on a tip-filled trip through Panther.

Inside Mac Radio

Hours of informative expert Mac chat.

Studio Artist 3.0

Studio Artist 3.0 has many new features include the Vectorizer raster to vector synthesizer with EPS output capabilities, enhanced animation capabilities, and greatly expanded image processing and Paint Synthesizer functionality. This demo times out after 40 minutes, and file export and save are disabled.

Magnum Opus

To mark the twentieth anniversary of the very first Macintosh, Alexander MacLean has created Magnum Opus, the largest compendium of Apple hardware icons ever – 18 months in the making and 270 individual icons. Every single piece of Apple hardware is somewhere in this set. If you like them, email Alexander at alexander@widgetwidget.com

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Cover CD1

MARCH 2004

The CD-ROM on the cover of *Macworld* is supplied as is, subject to the following terms and conditions. The CD-ROM is provided as a free item to readers of *Macworld* for their personal use, and may not be resold or copied for distribution. The publisher shall have no liability without limitation for any losses or damage arising from using cover-CD software – or for taking advice from *Macworld's* CD trouble-shooting point-of-contact – including any loss of profit, damage to equipment or data, interruption of business, or any other damage, direct or accidental. It is strongly recommended that you back-up any programs or data on your hard disk before installing any cover-CD software. If problems occur, it is most likely to be a result of an incompatibility or conflict with other software on your system. *Macworld* cannot be held responsible for discontinued offers. This does not affect your statutory rights.

INSTALL

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

Adobe Reader 6 (OS X only)
Install this to be able to read many of the on-screen manuals. Acrobat Reader 5.1 is also available.

StuffIt Standard
Installers for StuffIt Standard 7.03 (Mac OS 9) and StuffIt Standard 8.02 (Mac OS X) are included.

QuickTime 6
Some programs require QuickTime 6. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD & SERIOUS SOFTWARE

MP3 Gym

The ultimate personal trainer! The world's first and only audio personal trainer recorded on MP3 files for iPod. Demo.

Art Director's Toolkit 3

Eight utilities that help designers get information they're looking for, such as colours and measurements, quickly. Fifteen-launch demo.

LetterWorks 1.5.0

Write letters and focus on content while formatting and default text are determined by predefined stationery. Watermarked demo.

Demos/trials include...

Audio Ease Altiverb
Boinx iStopMotion 1.2.1
ColorBreaker 5, DiscBlaze 2.2
DocuSlim EV
DVTimeLapse 0.3.1
GSM Remote, iBeeZz 2.2.1
ImpOSCar 1.0.0 VST2
iPod Decloak 100 1.0
Kwerkx File Join/Saw
Mariner Write 3.6
MobileSync 1.02
Music Math 3.0
NetNewsWire 1.0.7
Outpod, PCR 3.0.3
PnPTM, PocketMac 3
PSR 4.0.1, Show Control Pro
Simodifier
Speed Download 2.2
Stop-Motion Junior/Studio
TinkerTool, Ultralingua
Voice of the GoatCactus 1.0
Xtream Path

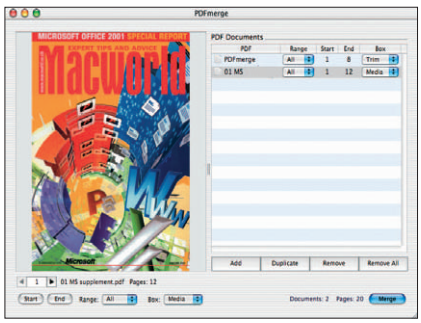
Alien Action Dome Revisited

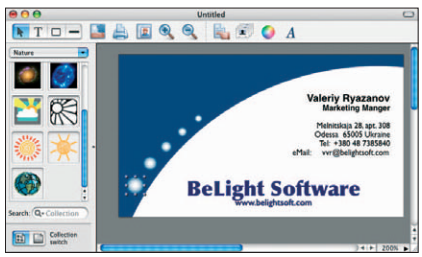
Go back to the old days of arcade games with today's technology.

CD CATALOGUE

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2004 – almost 437,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.3) is also included – don't forget to register if you find our library useful.

OTHER MAIN CD ITEMS





Two PDF tools

PDF Enhancer 2.0 improves the quality and functionality of your PDF files. It can change the colour-space of text and images, change layout or imposition, add stamps or watermarks, reduce file sizes, merge multiple documents and apply features such as security and linearization. Important elements such as bookmarks, annotations, hyperlinks and form fields are preserved.

PDFmerge 1.0 can create a PDF document from one or more source documents. It supports many different input formats including PDF, PostScript, EPS, TIFF, JPEG, PNG, PSD, GIF and JPEG2000. Pages can be reordered easily via drag-&-drop.

Try each of these for 10 days.

Aki Mahjong 1.0.0

Aki Mahjong Solitaire elegantly blends the ancient Chinese game of Mahjong with an enchanting journey across Japan.

The principle is simple: you have a number of ivory tiles arranged on a beautiful Japanese backdrop. Make all of them disappear by matching them to similar tiles while watching the relentless ticking away of the time limit.

At each step in your path, you encounter new challenges in the variety of tile layouts presented to you, and a variety of skill levels that ensure you'll always find the experience engaging.

Play the first three levels with this demo.

Business Card Composer

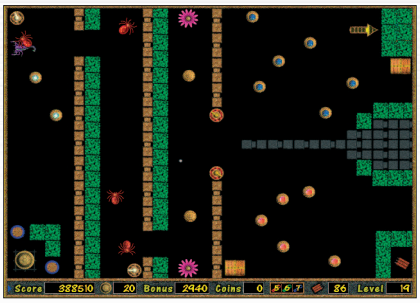
Use Business Card Composer to design and print custom business cards. No design skills are required to create perfect business cards. Just choose one of the 150 designs or create one from scratch by using more than 500 included designs. Apply more than 50 masks to images, control opacity and assign shadows. There's even a built-in Google search! Then drag an Address Book record on to the card to fill it with personal information, and print the cards on your favourite card stock.

If you often communicate with people, have more than one job, or like to update your cards often, Business Card Composer will save your time, money... and nerves!

FAULTY COVER CD-ROM?

- If your cover disc is broken, please contact Minesh Patel, on 020 7831 9252, or email at mineshp@macworld.co.uk for a replacement.
- If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email cd@macworld.co.uk
- Drag installer files from the CD to your desktop before clicking on them.

GAMES WORLD



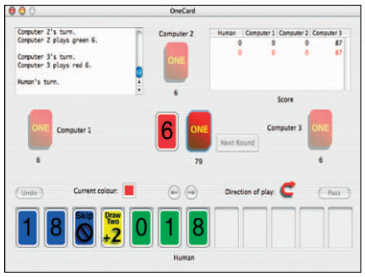
Temple Tantrum 1.1

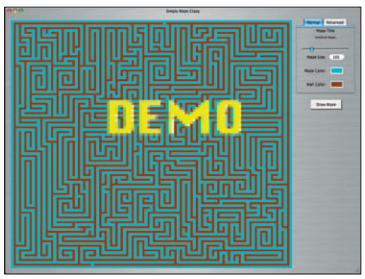
Temple Tantrum is an exploration, arcade-type shareware game developed by Ground Zero Software. Your ultimate goal is to complete all levels in the game, gathering as many gems, treasures and other goodies as you go, eventually retrieving the Phoenix Eye.

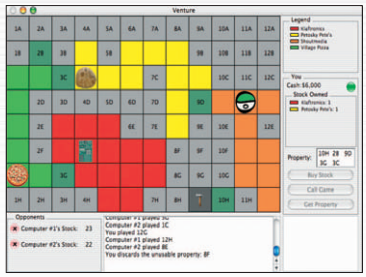
Temple Tantrum contains over 100 levels, consisting of several different divisions. Your journey begins in the courtyard but will take you through the garden, fire, maze, dungeon, tower and treasure levels. There are also plenty of bonus levels along the way through which you can gather plenty of extra goodies.

Carbonized for Mac OS X but runs under Mac OS 8.6 and higher.

DEMOS & GAMES







Another month, another top 10 games!

Arcaders will enjoy a nostalgic trip back to the '80s with Digger, and the multi-themed Tetris-like Downfall 2.2.

If you like card games then try Gaps 3.1, or Montana by another name, and OneCard 2.1, which has rules similar to Uno.

Boardgamers can jump to Lux 3.8.3, the Risk-like epic expansion game, and Tahtzee 1.1, a slick Yahtzee-style game. And the strategy kings among you can try LinkLines 1.0.5, a remake of the classic Lines puzzler, Venture X 1.0.4 and Zap 1.0.

Finally, don't miss the demo of Simply Maze Crazy 1.1 which creates unique mazes based on criteria you enter.

(Top row) LinkLines 1.0.5; Venture X 1.0.4 (Middle) OneCard 2.1 (Bottom) Simply Maze Crazy 1.1

MAC OS X/9 SHAREWARE & UPDATERS

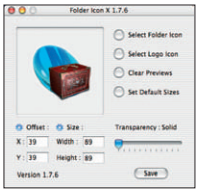
Over 80 useful programs, all subdivided into categories, including:

Aquallegro

ApplesToOranges

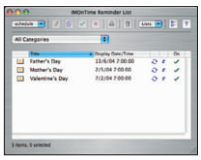
ATPM 10.1
Audio Toolbox
Authoxy 2.3
Back Up User Prefs 4.2.5
BackTrack
Burnz
Complete Collector 1.1
CopyWrite
D notes 1.1

DeKstasy 1.3
DockFun! 4.1.2
EasyFind 3.1
Easy Numbering
Ebony & Ivory 1.8
FastScripts 1.1.5



FolderIcon X 1.7.6
Fov Calculator1.0.3
Googol 1.0
FruitMenu
GrepArtee
HTML Optimizer
HTML Optimizer Pro
IconizerPro X

Idle Pictures 1.2.1



Imontime 2.0.6
iTunesSaver 1.0.5
JellyfiSSH 3.0.2
LaunchItems X
MailPriority 1.4
MediaCalculator 3.8.1
MidiGrasshopper
OnyX 1.4.0
Painters Picker
PerfectPitch
QueueSync

Reference Miner 1.1
Safari Menu
Silk

Slideshow Magic 2.0
SoraTile 2.4.4
SpamStopper 1.4.7

May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.
May The Fontz be with you.

The Fontz X 3.5.5
TheUnread 1.0.1
ToyViewer 4.50
uControl 1.4.2
ViewIt 2.3.8
WebSiteMaestro
Zap 2.6.6

UPDATERS

This month's dedicated updaters folder includes over 30MB of patches to bring many popular applications bang up-to-date, including:

CrystalMaker 6.3.2
NAV 7/8/9 (Dec 03/Jan 04)
Nikon Scan 4.0.1
Sibelius 3.1
Virex OS X (Jan 04)

DON'T MISS...

Cool Extras

Hot on the heels of Apple's new iPod Minis are these two sets of icons…

- Eleven outlined minis and folders from Helmer
- Fifteen detailed minis and folders from SM Hill

Mac ISP

Access offer from Moose Internet Services.

Netscape/Internet Explorer/Opera

Netscape X 7.1, IE X 5.2.3, IE 5.1.7 & OE 5.0.6, and Opera 6.0.3

Plus…

… many thanks to Simon Youngjohns (youngjohns@hotmail.com) for our CD icons.

SHAREWARE

Association of Shareware Professionals

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Cover DVD
MARCH 2004

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Macworld Games DVD volume 1

in association with Softline
Software • Technology • Solutions

Apple Store

Jump into the exciting world of Mac games!

Games are an essential part of the Mac experience, and you'd be a fool to miss out on all the fun.

Whether you're a graphic designer who wants to shoot aliens after a hard day's work, a Web surfer who fancies himself an empire builder, or a kid looking for some light relief from homework, there's an amazing choice of games out there for the Mac.

You can choose from action or adventure games, role-playing fantasy stuff, realistic and completely unrealistic simulations, strategy titles, sports, arcade, card and board games, and a ton of learning software that's fun as well as educational.

You can be Indiana Jones one minute, Tiger Woods another, and secret-agent 007 the next – or why not try out some kick-ass adventure as Tomb Raider's Lara Croft. You can take on the role of Harry Potter, Spiderman, an X-Man, Star Trek captain, Jedi warrior, or WWII tank commander. On a Mac you can fight aliens or fight as one. You can manage Chelsea Football Club or shunt Michael Schumacher off the tarmac at Silverstone.

You can control a family of Sims, build a zoo, a city or an empire. D-Day is just around the corner, and so are Nazi zombies, double agents and top names in skateboarding, snowboarding and surfing.

Computer games are entertaining, educational and escapist. With the Mac's new graphics power you're just a CD or DVD away from exploring mysterious worlds, creating civilizations or hitting a hole in one at the tricky 17th green at Sawgrass.

If you haven't explored the gaming potential of the Mac, this DVD is going to be a real eye-opener. Thrill at the games trailers, play some of the hottest demos (check-out the game's system requirements first), and keep your entertainment collection bang up to date with the latest patches – all gathered together for you right here.

Enjoy!

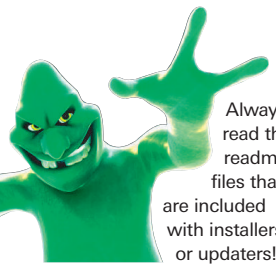
21 games to play

- Rayman 3: Hoodlum Havok
- Tiger Woods PGA Tour
- Ghost Master
- Tony Hawk's Pro Skater 4
- Total Immersion Racing
- Unreal Tournament 2003
- Kelly Slater's Pro Surfer
- Medal of Honor: Spearhead
- Warrior Kings
- Return to Castle Wolfenstein
- Neverwinter Nights
- Harry Potter & The Chamber of Secrets
- F1 Championship Season
- Ghost Recon: Desert Siege
- Star Wars Jedi Knight II: Jedi Outcast
- WarCraft III: Reign of Chaos
- Championship Manager 4 (03/04)
- Enigmo
- Disney/Pixar's Finding Nemo
- Indiana Jones and The Emperor's Tomb
- Toy Sight

Install

When you click to install the demo, a folder appears on your desktop. Go to the Finder, and drag the demo folder to your hard drive before double-clicking to uncompress and install.

You'll find installers for Stuffit Standard (Mac OS 9 and OS X) on this month's cover CD1.



Always read the readme files that are included with installers or updaters!

SPECIAL BONUS FOR GAMES ADDICTS!
• Black & White extra maps • Game Ranger
• Quake 3 mod • SimCity 4 Landmarks
• Unreal mods • Warcraft III mods

Mac gaming 'facing mass piracy peril'

MS sanguine on Mac sales

Microsoft expects Apple's Mac unit sales to rise within the next three years, a senior executive told Macworld.

UK group marketing manager for home and retail products Jonathan Hulse added that this means Microsoft expects Apple's market share to increase. "We don't expect a huge resurgence to the market share Apple had in the Eighties, but we see the platform as heading in a positive direction," he said.

Hulse added: "We see the Mac productivity software market growing. Our research shows that half of Mac users depend on Office, some three or four times a day. We know Mac users rely on Office, and that's how we justify the major investment we're making in the product."

With this in mind, Microsoft announced its plans to release Office 2004 for Mac and Virtual PC for Mac Version 7 in the first half of 2004 at Macworld Expo last month.

Development also continues for a new version of Virtual PC (acquired by Microsoft from original developer Connectix last year), which it plans to release in the first half of 2004. This version will overcome the G5 process or incompatibility the product faces today, and will incorporate speed hikes and other improvements, Hulse suggested. MW

Mass piracy is threatening the Mac games industry, meaning some titles may never make it to the platform, industry insiders have warned.

This shocking news has emerged following MacSoft's introduction of a v.1.3 update for Halo in January. Along with bug-fixes and gameplay improvements this means Halo will check a Mac's CD drive to ensure that a legitimate copy of the game is present before it lets you play. MacSoft didn't want to do this, the company said, but had to as more copies are being stolen than sold.

MacSoft president Peter Tamte said: "Our wake-up call was when we physically tracked more people stealing Mac Halo online than buying it, even though we can physically track fewer than ten per cent of downloads. This dragged us kicking and screaming into copy protection. Unfortunately, all the methods we can employ need the CD in the drive. We were dragged into this," he said.

And it isn't just MacSoft that's being affected, Aspyr Media's director of PC and Mac development Glenda Adams told Macworld: "Piracy hurts Aspyr just like it hurts the others. Each copy of a game that's pirated takes away a potential sale. Even a small number of sales lost through piracy can make the difference between a game breaking-even or losing money – we don't make so much money from each game that we can absorb that.

"In the long term there could be fewer Mac games," she warned.

MacPlay President Mark Cottam concluded: "With less revenue to work with, publishers have fewer resources to invest in licensing and developing games, so not only will the games they work on be of lower quality, but there will be fewer of them too."

The relatively small Mac games industry is concerned. Broadband Internet adoption has opened the door to theft. Freeverse Software vice president Colin Lynch Smith said: "Piracy has always existed on the Mac, but it has become easier, more widespread and more damaging."

'Stealing games today robs the platform of tomorrow's titles'
MacSoft president Peter Tamte

Feral Interactive founder David Stephen said: "Piracy never used to be such a problem, but broadband Internet has made it worse. We first saw significant piracy upon the release of Black & White in early 2002.

Ambrosia Software leader Andrew Welch said: "Many top games never make it to Mac because of the added costs for a niche market; piracy reinforces the notion that it isn't worth developing for Macs."

Misconception

A misconception exists about how the Mac games industry works. To publish a popular title such as Halo, developer/publishers must customarily pay the owner of the PC version of the product a licensing fee. They must then sustain development costs, packaging and distribution costs – and are often required to pay a certain royalty to the original publisher on sales. In many cases, even a minimum royalty payment is set, and Mac publishers may have to pay the balance due under that agreement if a game fails.

Adams said: "Because the Mac is a small market we are always having to make the case that there will be enough sales to make it worth bringing a game to the Mac. If sales shrink because of piracy, it gets harder to make that case."

MacSoft's Tamte said: "Damage is huge: all publishers make decisions about which games to bring to the Mac based on how well earlier, similar titles sold. Stealing games today robs the platform of tomorrow's titles."

Smith observed: "The Mac game market is a small pond. Each lost sale hurts because we sell only a fraction of the games PC developers do. A hit on the PC side can make you rich; a hit on the Mac will pay the bills and bring some capital to get the next game going. If fewer games do well because of piracy, there may not be a next game."

UK games developer Mark Thomas of porting house Coderus said: "If we don't recover costs, future projects can be at risk – users

by both casual and systematic copying

have less titles, and fewer developers risk introducing Mac games.

"We understand there will be piracy, but such massive levels will affect future titles. We are losing money that we need for future games. Mac gamers aren't getting the full picture here."

Stephen explained: "It may end up that only blockbuster games reach the Mac, because they are the only ones that can make a profit despite piracy. This will reduce the number and the range of titles available."

However, Smith believes it isn't life or death: "I know there are worse crimes in this world than game piracy. I doubt anyone will starve to death because someone stole a copy of WingNuts. But if you want to see WingNuts 2, then consider paying for games. You'll feel better and we can think about bringing you more titles, rather than how to add more copy protection or how to track you down with lawyers and ninjas."

"Mac users are better than this. Leave thievery to the Windows world, along with the worms, viruses and all the other dirt.

"We want to keep making games for Macs. Piracy threatens that. Many of our programmers make much less money than they could, but they love Macs, and robbing guys like that is low," Smith said.

Thomas spoke as a Mac-loving programmer: "Porting skills aren't widely available. If a developer's been burned with a port then he won't do another – like anyone they have families to feed, and if other areas pay better, what would you do?"

Thomas led the Mac port of Virtual Programming's WipeOut. He said that when they introduced an update that fixed the game while making it harder to steal, the company saw messages appear

online warning others not to install these, as they could not then play their stolen games. "This will affect future releases," he said.

Welch stressed: "Software activation isn't about hindering legitimate users, it's about preventing casual, rampant piracy. It's why stores have security, why we lock our doors at night. Theft costs everyone."

Forced to act, Tamte said: "You'll see three initiatives from the industry: information; protection and prosecution."

Necessary measures

Welch added: "More companies are moving to software activation and online serial checks."

Other efforts to make it harder to steal games will include: shipping them on DVDs, copy-protection and posting fake spoof versions of titles online. Adams said: "Aspyr has been forced to examine copy protection for Macs. Education is crucial. Gamers must realise that they can have a huge effect on how many games reach the Mac – the healthier the industry is, the more great games will go Mac."

Like Apple CEO Steve Jobs, most involved agree that honesty exists. Tamte said: "Most people want to do the right thing. Once they understand piracy is theft they'll reconsider whether they want to steal."

Feral's Stephens said: "We need to reduce the number of people who can honestly claim they didn't know they were doing anything wrong."

No one in the industry wants to resort to prosecution, Tamte said: "But the damage now is so severe that this will change – if someone stole from you, wouldn't you want to see justice?"

Tamte said: "It's disheartening after working 18-hour days for many months to see thousands of people steal your hard work. I hope people will ask themselves if it's right to steal games online they would never steal from HMV. Just because it's easier doesn't make it less wrong." **MW**

Jonny Evans

70% The number of Macworld Online readers who haven't experienced degraded iPod-battery life.

New logic boards for iBook owners

Apple will replace faulty iBook logic boards found in models sold between May 2002 and April 2003 under its new iBook Logic Board Repair Extension Program. Available worldwide, the move is thought to be a response to threats of legal action by angry US iBook owners.

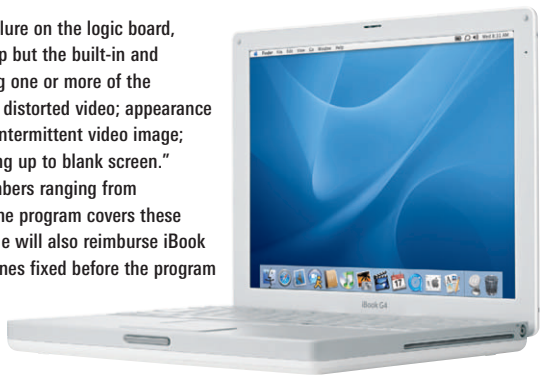
Over 2,000 aggravated Mac users had signed up to take part in a class action suit against Apple on www.blackcider.com regarding failures in their consumer notebooks.

Apple head of worldwide product marketing Phil Schiller told Reuters: "A small number of iBooks introduced in 2002 have a display problem caused by a component failure on the logic board."

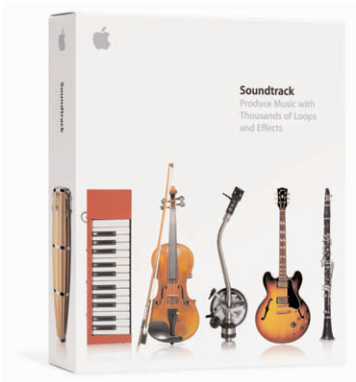
Apple says that in order to qualify, the iBook must have been made manufactured between May 2002 and April 2003 and possess "a particular component failure on the logic board, resulting in the computer starting up but the built-in and attached external displays exhibiting one or more of the following symptoms: "Scrambled or distorted video; appearance of unexpected lines on the screen; intermittent video image; video freeze; or the computer starting up to blank screen."

Affected iBooks have serial numbers ranging from UV220XXXXXX to UV318XXXXXX; the program covers these for three years after retail sale. Apple will also reimburse iBook owners who paid to get their machines fixed before the program was launched.

To find out if you are covered, call the UK AppleCare Contact Centre on 0870 876 0753.



Cluster bombs ahead



Soundtrack 1.2

Apple has updated its music-creation software Soundtrack to version 1.2. The 30MB update is available online. Users are required to enter a serial number and personal information into a form on the Apple Web site.

Among other improvements, V1.2 offers better support for large audio files, timeline and media-manager enhancements, and is "strongly recommended" for all users, Apple says.

Virginia Polytechnic is replacing its Power Mac G5 supercomputer cluster with Apple's new Xserve G5s.

"We know the Xserve G5 cluster node will deliver even more impressive cost/performance at our Terascale Computing facility due to its server-optimized architecture, CPU density, ground-breaking performance and innovative management tools," said Virginia Tech IT VP Erv Blythe.

Virginia Tech spokeswoman Lynn Nystrom said it has had "a number of enquiries" from government agencies eager to use Déjà Vu, the cluster-management software written by project leader, Srinidhi Varadarajan. They include NASA, Argonne National Lab and the US National Security Agency.

Xserves are already used by the Australian Defence Force's Science and Technology Organisation, which invested in a 16-node Xserve cluster to accelerate its research. DSTO head Michael Webb said: "Previously we could not produce scientifically valid results in under than a year. With the cluster we completed our chess analysis study in just four months. Xserve offers a stable and productive clustering option for sophisticated scientific research."

'Apple's advantage is a stable, virus-free OS. The majority of topics surrounding Microsoft Windows focus on security and applying patches.'
Apple information systems and technology group senior director Dean Rally

Apple appears ready to get more government business. It began working with government-oriented US reseller, PC Mall Gov last year, and will exhibit at the US Federal Office Systems Expo in March.

Both the Lewis-Sigler Institute for Integrated Genomics and biotech firm Genentech use Xserves. David Botstein told Forbes magazine that he cut maintenance costs at the Lewis-Sigler Institute by using Macs. Genentech's senior systems specialist Mark Jeffries praised Xgrid – Apple's computational clustering technology, telling eWeek: "While companies looking for clustered computing solutions might be put off by a new-to-the-game vendor, Xgrid will be good for many folks."

Xgrid creates a grid that exploits unused computer capacity on a network to run batch and workload processing.

Xserves and G5s – with the help of Virginia Tech – are helping Apple enter new markets. Apple server hardware product manager Doug Brooks told Server Pipeline: "The response we've got outside the traditional Apple market is impressive. It includes interest from larger businesses and enterprises, typical IT shops, telcos and ISPs. We've got customers in areas you'd never think of, such as financial services."

Similarly, Apple's senior vice president Jon Rubinstein told E-Commerce Times: "A lot of data centres that traditionally don't use Macs now know that Apple gives them more cost-effective storage."

Apple's move to certify its Xserve products for use in Windows and Linux environments helps. Rubinstein added: "We're starting to get pull from a variety of places because in the storage world as long as you're

New Safari, Java, with X 10.3.3 due

Apple has released Safari 1.2 and Java 1.4.2. It is also working on a major Panther update, 10.3.3. The latter has been seeded to developers, as Macworld goes to press.

Safari 1.2 – a 7.7MB download – is more stable, and extends standards support. It can authenticate into certificate-supported sites, and offers LiveConnect support for communication between JavaScript and Java sites that need the browser and Java applets to work together.

"This update offers full keyboard access for navigating Web pages, and the ability to resume interrupted downloads," Apple said.

The Tabs-based features introduced in version 1.1.1 are extended – users can tab between form elements, such as buttons, checkboxes and submit buttons. Safari 1.2 also lets users tab to hyperlinks on a Web page.

The 29.4MB Java update supports Sun's Java 1.4.2 APIs, and improves drawing performance and stability for Java applications and applets.

A comprehensive update, Mac OS X 10.3.3 improves Mail, Font Book and Address Book.

Developers have been asked to test the update in several key areas: Graphics, OpenGL, games, USB devices, printing, networks and Cocoa applications.

Apple is said to have found problems in the Panther update – which has been dubbed build 7F24. These are said to include wake from sleep and Bluetooth-related issues.

With the developers seed weighing in at 75MB, expect Mac OS X 10.3.3 to offer major usability and stability enhancements on its release.

with Xserve G5s

compatible and have the appropriate certifications people care only about cost per megabyte."

Brooks identified another Xserve advantage: "Our server configurations ship with an unlimited client licence for Mac OS X Server, so we've given it a Unix-based foundation, phenomenal services from file and print for Mac, Windows and Unix clients, alongside a selection of industry standard applications that matter.

"Because so much is built into Mac OS X, Xserve is ready to jump into a wide variety of server tasks out of the box, without any additional software."

Apple's Server software carries the same sort of UI as iTunes or iPhoto, says Rubinstein. Brooks claims a cluster can be configured in 20 minutes.

Speaking at Macworld Expo San Francisco Apple information systems and technology group senior director Dean Rally said: "Apple's advantage is a stable, virtually virus-free OS. We were at a symposium recently where the majority of topics surrounding Microsoft Windows focused on security and applying patches."

Perhaps the most important factor in the Xserve's popularity is price. Brooks explains: "Other vendors will tout a £700 server. That's great, but as soon as you configure it with anything meaningful, the price goes right up to where we are. And pound per pound, feature for feature, we are less expensive than our competitors."

Forrester analyst Frank Gillet warned Enterprise Linux IT that Apple can only be a niche player in the server market. Why? "It ain't Linux," he replied.

Brooks disagrees: "We offer the same open-source platform that Linux does. We're based on an open-source technology platform, we run many of the same server services. Our value, from a software perspective, is Apple does the integration for you."

Despite the positive outlook, Apple does not see high-performance clusters as a key sales-driver. Apple server hardware product management director Alex Grossman told Forbes: "No one in the next year is going to say, 'Apple, the super-computer company.'" Aberdeen Group analyst Peter Kastner agrees: "I don't see it putting many pennies on the bottom line."

Brook says the Xserve is for Apple's key customer base: Education, small and medium business, creative and video markets. **MW**

Karen Haslam

Next-gen G5 'is built in Xserve'

Apple is building into its Xserves a variant of the IBM G5 chip that consumes half the power of its predecessor. Industry experts expect Apple to release desktop Power Mac G5s that also exploit the new processor.

The PowerPC970FX is the chip in question. It typically consumes 24.5W when running at 2GHz – compared to the 51W typically consumed by the current PowerPC 970 chip when running at 1.8GHz. More details about the chip will be presented on February 16 at the International Solid State Circuits Conference in San Francisco.

Apple's new G5 Xserves are expected to ship in mid-February. Editor-in-chief of Microprocessor Report Peter Glaskowsky expects Power Macs integrating the new G5 to ship then, too.

Some analysts have attributed IBM's power savings to its use of silicon-on-insulator (SOI) technology. SOI is a process by which IBM builds transistors atop a thin layer of silicon placed over an insulating material such as silicon oxide in order to insulate the circuit against power leakage.

The move means Apple and IBM have taken another step toward keeping Apple CEO Steve Jobs' promise last year that it would ship Power Macs running at 3GHz by this summer. It's thought Apple may raise the bar on its pro desktops to 2.6GHz in the coming weeks. MW

Tom Krazit

Tech events diary 2004

MacFest
March 12-14
Risskov, Denmark
The biggest Mac event in Denmark.
www.macfest.dk

Milia 2004
March 31 April 2
Palais des Festivales, Cannes, France
A global meeting place to discuss industry developments in content and technology trends in Broadband, Mobile and Interactive TV.

SCORE-Computer Games Conf & Expo
April 4-5
Business Design Centre, London
Retail, reseller and dealer event for the PC hardware, accessories, software, games and DVD markets.
www.score-event.co.uk

NAB 2004
April 17-22
Sands Center, Las Vegas, USA
The largest exhibition for broadcast, video, and effects producers.
http://www.nab.org/conventions/nab2004/

Seybold Seminars
April 18-21
Amsterdam
A look at new media technology products and practices.
www.seybold365.com/

Infosecurity
April 27-29
Olympia. Europe's Largest Information Security Event
www.infosec.co.uk

Drupa
May 6-19
Düsseldorf. World market print media publishing and converting show.
www.drupa.com

Apple-HP iPod deal inked

In June, Apple and PC giant HP will release an HP-branded iPod. This strategic partnership was announced by HP CEO Carly Fiorina's during her Consumer Electronics Show (CES) keynote speech. HP has been unsuccessfully seeking a device and portal solution; but has instead opted to work with Apple in a deal initiated by Apple CEO Steve Jobs, who asked Fiorina: "Why go with an inferior product and an inferior music store?".

It means HP iPods will be on sale in 110,000 outlets worldwide, and that HP – the world's largest PC vendor – will offer iTunes for Windows pre-installed on its computers. From summer, you'll find iTunes out-of-the-box in HP Pavilion, Media Center and Compaq Presario desktops and notebook consumer PCs. Apple's two million-selling product is available in 8,000 retail outlets worldwide today.

Market-share opportunity

Welcoming the plan, Needham & Co analyst Charles Wolf said: "With this agreement the leading consumer PC company will be selling Apple's music offerings. HP captured 28 per cent of the US home PC market and 17 per cent of the global home PC market in the third quarter 2003". Apple may reach deals with others.

The HP-Pod is light blue and silver (see picture), and carries the HP brand – though an Apple logo appears when you switch it on.

Jobs does not wish to repeat Apple's desktop history. The once market-leading Apple lost its dominance to Windows in the 1980s and 1990s; and Jobs won't be burned again.

iTunes Music Store holds 70 per cent of the US downloads market, and the iPod commands 31 per cent of the music-player market. Apple is courting partners to consolidate that leadership. "The goal is to get iPods and iTunes into the hands of every music lover around the world, and partnering with HP is going to help us do just that," said Jobs.

Apple may lose margin, but will benefit from boosted market share – and, as the market leader, Apple's technologies in the digital music market predominate over Microsoft's.

Noting Microsoft's historic practice of marginalizing competitors even when they offer better products, Wolf writes: "Fortunately, for Apple, the economics of increasing returns that encouraged software developers and users to support a single platform in the PC world do not apply to music stores or players. Consumers have been indifferent to the wide range of stores and players that use Microsoft's Windows Media format. They regard these stores and players as inherently inferior" to the Apple equivalents, he says.

Apple and HP have no plans to support Microsoft's Windows Media Standard at present, despite frequent squawking from the software giant that lack of such support limits consumers "freedom of choice" – an argument Jobs rejects: "Why should we work with another music store when we are working with the Microsoft of music stores?" he asked.

In September, Apple's QuickTime marketing director Frank Casanova criticized Microsoft's commitment to building industry standards, saying: "When you are part of a standards organization you don't develop behind closed doors". MW

Jonny Evans

5 The number of hours per week UK workers spend not working.

1 in 5 The number who get caught by their bosses.

iPod updates

Apple's new iPod mini may see its £199 launch price cut in the UK, Apple VP Greg Joswiak confirmed.

Apple UK has also made replacement iPod batteries available for £79. iPod AppleCare protection is available for £59.

Rolling news

NetNewsWire 1.0.7 from Ranchero Software is an RSS newsreader for Macs. In use it means Macworld readers can watch our rolling daily news coverage. Simply enter the following URL into your RSS reader: http://www.macworld.co.uk/rss/macworld.xml.

www.ranchero.com

Free joysticks

The UK Mac Dealer Association has announced that it is giving away 1,000 brand-new Gravis MouseStick II joysticks and MacGamePad game controllers. Both work under System 7.1 through to Mac OS 9.2 and OS X Classic mode. OS X games will work, as long as they support 'sprocket' game devices. To order, you must send £5 per device to cover post and packing.

www.mac-dealer.com

Euro music services 'soon'

Music-industry insiders expect Apple, Napster and other major digital-music services to launch in Europe as soon as the second quarter of 2004.

Universal Music's eLabs president Larry Kenswil told Macworld: "By the second or third quarter there will be a number of major services in Europe, and I expect one of these will be Apple's iTunes Music Store."

Kenswil spoke at the Music and Technology conference at the Royal Society in London last month. His assessment of a Q2 rollout for Apple's music store was shared by others from BMG, EMI and other smaller labels represented at the show with whom Macworld spoke.

Digital music distributors have faced a series of hurdles in preparing their services for a European launch. Executives at music conference Midem in France complained of "a maze of licensing contracts, music release dates that differ by country, and incompatible billing systems," Reuters reports.

Speaking at Midem, Apple's vice president of applications and Internet services, Eddy Cue said: "One of the things we're working on with the European labels is to get them to understand how the business works in the online space, and having them change some of their business practices.

"We will be here this year. I'm not going to announce the date at this time, but we are working very hard."

Cue told music-industry executives that the "layers of bureaucracy in the European music industry were limiting the number of songs it could offer consumers here". MW

Jonny Evans

NAMM roundup

■ **Native Instruments is ending support for pre-OS X systems, and has announced that effects processor Spektral Delay is available for Mac OS X. NI also announced that the Traktor FinalScratch digital DJ system will soon be optimized for use with Mac OS X 10.3.**
www.native-instruments.com

■ **Mark of the Unicorn showed new features for Digital Performer, including a consolidated preferences window and enhanced MIDI arpeggiator. It also previewed a Beat Detection Engine that determines beat locations and the overall tempo of the audio, MOTU said.**
www.motu.com

■ **Propellerhead Software's ReCycle 2.1 prepares drum loops by analyzing and slicing them. It will cost £105.**
www.propellerheads.se; www.kelkoo.co.uk

■ **MakeMusic! is shipping Finale 2004, its music-notation software, for Mac OS X. It provides six ways to enter notes; Human Playback, which recreates phrasing and nuances; FinaleScript, which modifies multiple files; SmartMusic Software Synthesizer; and SmartMusic SoundFont. Finale 2004 costs £299, or £199 for academic buyers.**
www.makemusic.com; Etcetera, 0870 873 8731

■ **Celemony has updated Melodyne, its pitch/time editing software, to version 2.5. It supports the Digidesign RTAS Plug-in interface and can operate in Pro Tools. The update is free for owners of Melodyne 2, which costs £499.**

The company also showed Melodyne uno for OS X. This enables pitch correction, vocal production and melody editing. It should ship in April for £96.
www.celemony.com

Logic Pro 6 announced

Apple has tweaked its pro-audio product offering, consolidating all its recently acquired Logic products into two new audio suites: Logic Pro 6 for professional musicians, and Logic Express 6 for educators.

These join the recently launched GarageBand and Soundtrack 1.2, in what Apple is describing as a "streamlining" of its pro-audio product line. The announcements mirror the segmented approach to market-capture seen in Apple's digital-video products.

The Logic products offer features taken from Logic Platinum 6, launched in February 2003. Both contain the complete Apple/Emagic DSP (Digital Signal Processing) and audio-instrument product line.

Apple describes the £699 Logic Pro 6 as the "standard in computer-based music production". It offers a set of 53 audio DSP plug-ins and software instruments, MIDI timing and synchronization, mixing and automation with total recall, and non-destructive editing of audio and MIDI in real-time. It also enables 960 PPQN (pulses per quarter note), is able to create 5.1 and 7.1 surround sound, supports up to 128 audio tracks, and features "virtually unlimited" input channels with a sample rate of up to 192kHz.

According to Apple, Logic Express 6 is "specially designed for the aspiring pro – offering an economic entry into the world of professional audio production." It features a set of tools for composing and producing music with "sophisticated results".

Logic Express 6 (£199) uses the same interface and workflow as Logic Pro, and features 30 plug-ins and software instruments, access to 48 audio tracks in stereo or mono, 16 instrument channels, 18 high-quality effect plug-ins, and 12 audio outputs.

Apple also previewed its next generation of technology that will appear in future versions of Logic.

Sculpture is a component-modelling-based synth that generates a palette of expressive and highly animated sounds. UltraBeat is a percussion synth that provides multiple techniques for generating electronic or acoustic drum sounds. Guitar Amp is a simulator that Apple claims "recreates the sounds of the best-known guitar amplifiers".

Future Logic Pro versions will be able to import GarageBand projects and will include support for an enhanced version of Apple Loops, the open format for real-time matching of audio loops and sound effects. This will let Logic Pro import MIDI performance and channel strip configuration data, "providing unprecedented flexibility for loop-based composition," Apple says. **MW**

Karen Haslam

Cubase's valuable input

Steinberg has introduced Cubase Studio|4. It will cost £379, and combines the Cubase SL 2.0 sequencer with its MI4 USB audio/MIDI interface to offer four inputs and outputs, a 16-channel MIDI interface, Hi-Z instrument input, S/PDIF digital I/O, effects inserts and mic preamps with selectable 48v phantom power. The company plans to roll out cross-platform products that will combine hardware with Steinberg software. These will include System|2 with an entry-level MI2 USB interface, and System|10 with a FireWire 10-in/10-out interface.
www.arbitermt.co.uk, 020 8970 1909

EQ breakthrough

Unique Recording Software (URS) announced a pair of product bundles. The Native Graphic EQ Bundle costs £421, and includes RTAS and Audio suite for Mac OS X and OS 9. The Graphic EQ Bundle costs £804, and adds time-division multiplexing (TDM) and the new A10 and N12 graphic equalizers to the above.
www.ursplugins.com; Sonic Distribution, 01525 840 400

PowerFX has announced Apple Disc Jams, a £29 collection of CDs optimized for use with Soundtrack and GarageBand.
www.powerfx.com

ON THE DVD

On Macworld's massive games DVD this month, you'll find Feral Interactive's Rayman 3 demo, a game in which the lead character engages in battles with the crazed Hoodlum Army and its lethal level bosses.

"Rayman one of computer-gaming's best-loved characters is coming to the Mac for the very first time. He's stepping up to the big time with his biggest and best adventure yet – Hoodlum Havoc and a whole range of new weapons and powers", says Feral. The full version costs £35.
www.feral.co.uk

Dome roam

Alien Action Dome Revisited, the arcade entertainer from Slovis Software puts hero Glerp in a dangerous battle to escape from evil King Glip and his followers. Glerp is helped by friends, who smuggle him a selection of weapons. This 80-level game costs $12, and there's a demo on this month's cover CD.
www.slovis.com

In character

Lake Group Software has released version 2.2 of Simodifier, its gaming utility/character editor for The Sims. Simodifier 2.2 lets users "grow up" their Sim children, delete characters, set "star levels" for the Superstar expansion pack and edit human and pet character attributes, including personality traits and career paths. The registered version costs $10.
www.lakegroupsoftware.com

Schools 'moving to Mac'

Apple's UK education market share climbed to 8.5 per cent from 6.4 per cent year-on-year in the quarter ended October 2003, the company announced at UK education show, BETT 2004.

Apple UK education business development manager Alan Bennett said: "Our sales to traditional Wintel local authorities are growing, largely as a result of our focus on the creative use of ICT in the classroom."

Apple, which has been active in the UK education market for 20 years, already has a strong user-base in the UK, particularly in Scotland. Its iLife suite – especially the use of digital video in the classroom with easy-to-use software such as iMovie – has drawn attention to Apple's solutions for the sector in recent years.

Apple has published a host of educational resources for UK teachers to help them use iLife '04 in UK schools, while the government here extends its commitment to bringing technology into the classroom.

These resources include real-life classroom examples of how these technologies are applied. It also includes specific areas dealing with the way iLife technologies can be used in teaching literacy, numeracy, science, geography, history and art.

Recent studies conducted by British technology in education group Becta, in conjunction with Apple, Canon, Regional Broadband Consortia and others have proved that using digital video and computers as part of lessons has reawakened interest in learning among some previously disinterested pupils. Trials have seen reduced truancy rates, higher levels of interest and attainment and a variety of other advantages.

Class act
Rickmansworth School opened its new music technology suite in January, installing 30 eMacs and Korg Synthesizers, interactive whiteboards, and a SuperDrive-equipped Power Mac G5.

Apple's site offers teachers links to PDF resources for download, gathered by Apple Distinguished Educator David Baugh, as well as links to a selection of other valuable resources and research matter.

Learning curve

Teachers interested in learning more may want to check Apple's next Apple Teacher's Institute event in Cheltenham. This takes place from March 30 – April 4 and its theme is "Learning in a digital world".

The focus on developing educational solutions that match the needs of individual students is attracting strong support. Delivering his keynote speech at BETT 2004, the UK government's education and skills secretary Charles Clarke said: "We have to make our education service increasingly personalized to address the needs of every individual learner, every individual child in what we do, and how we take it forward. An e-confident school – one that lets teachers in a school be confident of using the technology to drive standards up – is the way to do it."

For more about Macs in education go to www.apple.com/uk/education. **MW**

Jonny Evans

Top Mac-game ports

UK developer Feral Interactive plans to publish Lego-based game Bionicle for OS X. This puts players in a game of good against evil featuring swimming, snowboarding, exploring forests and more. ChessMaster 9000 is also promised by Feral. The chess simulation emulates most levels of chess playing ability, so it's always a challenge, the company says.

Aspyr will release a Mac port of Novalogic's Delta Force – Black Hawk Down (left) in May. This modern warfare game puts players in the role of a US Delta Force soldier who must prevail against warlords in Somalia. The company's also preparing to unleash its port of Activision's Call of Duty, which puts players through World War II battles, fighting as Axis or Allied soldiers.

The company will also release the Allied Assault Breakthrough expansion pack for modern combat sim Medal of Honor. SimCity 4 players are promised an expansion pack, too: SimCity 4 Rush Hour offers a range of new transport options for dedicated Sims lovers.

Four years old in January, MacPlay has released four fresh titles, including Kasparov Chessmate, The Emperor's Mahjong, Hard Rock Casino, and Activision Anthology: Remix Edition. The latter collection offers over 75 Atari 2600 favourites from Pitfall! and Kaboom! to River Raid. The collection offers 30 more titles than were available on last year's PS2 version. **MW**

Business briefs

- The Los Angeles Superior Court has approved the class-action settlement that allows Californian G3 Power Mac owners who purchased Mac OS X before May 15 to get a refund – as long as they don't use OS X on their G3.
- A federal judge has upheld a jury ruling that Microsoft's Internet Explorer (IE) Web browser infringed on a patent owned by Eolas Technologies and the University of California, and ordered the company to pay $520.6 million in damages.
- Former Apple CEO John Sculley has joined the board of directors of OpenPeak, a software developer of wireless controls of consumer electronics, digital media, computers and home systems.
- Apple gained 11 per cent of the US studio effects market year-on-year, TrendWatch reports.
- Apple will pay off its outstanding $300 million debt on February 16. It has also sold its interests in Akamai for a one-time gain of $3 million.
- Wolfson Microelectronics, maker of chips used in iPods hopes to hire 80 engineers this year, but local reports say it's facing a skills gap in Scotland.
- Canada's decision to impose a $25 surcharge on digital music players is being challenged by a group of manufacturers, including Apple, HP and Dell.
- Roxio has arranged $22.5 million in equity financing with independent accredited institutional investors to expand its digital media activities.
- With tech industry recovery, Asia's electronics makers "are struggling to meet demand", according to local paper The Sarawak Tribune.
- Kodak will this year stop selling traditional cameras (APS and 35mm) in Western Europe, United States and Canada because of declining demand.
- Macromedia has posted third-quarter net profits up 24 per cent year-on-year. Revenues were $94.8 million, compared with net revenues of $83.2 million last year. Net income was $10.3 million.

Jobs & co fifth in US PC list

Apple exceeded average market growth in Europe last year – and became the number-five vendor in PC shipments in the US with a market share of 3.2 per cent in 2003, according to market analyst IDC.

Europe's PC market grew 19.7 per cent year-on-year during 2003's final quarter, driven by ever-increasing notebook demand and the late arrival of the long-awaited corporate refresh cycle.

Apple exceeded this, shipping over 51,000 Macs in the last three months of 2003 in the UK; a 25 per cent growth in sales year-on-year, IDC said.

IDC figures show that 4.5 million notebooks shipped in EMEA (Europe, the Middle East and Africa) in the quarter – a year-on-year increase of 49 per cent in the notebook market that helped the general PC market climb 19.7 per cent. 10.6 million desktops also shipped for a year-on-year 10.2 per cent climb. Overall, PC shipments reached record levels in the quarter, IDC said.

Apple saw a 10 per cent growth in its desktop sales and a 50 per cent growth in notebook sales, for an overall growth rate of 25 per cent.

IDC analyst Ian Gibbs observed: "Obviously, this is very promising for Apple – particularly when combined with the success of the iPod."

Worldwide PC shipments hit 44.5 million units for year-on-year unit growth of 15.2 per cent. The US saw growth of 15.4 per cent.

Gibbs pointed to the strong Christmas market: "The consumer market continued to boom in the fourth quarter, further fuelled by seasonal Christmas buying trends – a major factor in Apple's success."

IDC expects 13.6 per cent growth in the European PC market this year, with notebooks expected to drive this.

Despite the fourth quarter rally, Apple's shipments were down on 2002. It shipped 1,675,000 units in 2003, compared with 1,679,000 in 2002. **MW**

Karen Haslam

Apple on 4-year high

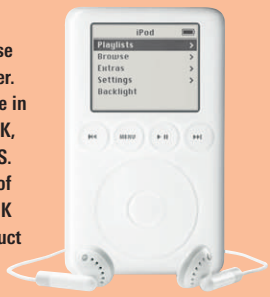
Apple returned its best results for four years in the crucial Christmas and Thanksgiving quarter, returning a net $63 million profit with revenues jumping 36 per cent year-on-year to reach $2 billion. The results compare to Apple's painful $8 million loss for the same quarter a year ago. Gross margin for the quarter was 26.7 per cent, down from 27.6 per cent a year ago. International sales accounted for 44 per cent of the quarter's revenue, Apple said.

The company noted that it shipped 829,000 Macs during the quarter – a 12 per cent increase year over year. It also shipped 733,000 iPods, a 235 per cent increase year over year.

Apple CEO Steve Jobs called this an "outstanding quarter" that begins the year "with strong momentum." He added that 40 per cent of Apple's installed base has migrated to Mac OS X, and iTunes Music Store holds a 70 per cent share of the legal music download market.

The company's cash reserves increased by $225 million to just under $4.8 billion thanks to "strong asset management", according to Apple chief financial officer Fred Anderson. Apple predicts a strong second quarter: "The company anticipates its third consecutive quarter of year-over-year double-digit growth in both revenue and earnings, with revenue of about $1.8 billion and earnings per diluted share of $.08 to $.10," he said. **MW**

iPod mania



Apple shipped 733,000 iPods – a 235 per cent year-on-year increase in unit sales – in its fourth quarter. Approximately 17 per cent, or one in every six iPods sold was in the UK, while two-thirds shifted in the US.

It appears that in the region of 125,000 iPods were sold in the UK – the largest market for the product in Europe.

The company has shifted over two million of its market-leading music players since launch. iPod now holds 31 per cent of the global MP3 player market by units and 55 per cent by revenues.

The company confessed to the well-reported shortage of iPods over the Christmas shopping period; it couldn't meet demand. "Even though we had a record quarter for iPod sales, it could have been higher if we didn't have shortages," Apple's chief financial officer Fred Anderson said, predicting that the product would remain popular in Apple's second financial quarter. It could have been worse: later reports suggested Apple's planners originally considered building as few as 250,000 units for the quarter. MW

Laptops top

Apple chief financial officer Fred Anderson revealed notebooks accounted for 48 per cent of Apple's Mac sales, with strong demand for all its products, bar the iMac. iMac sales declined 24 per cent year-on-year.

First quarter 2004 unit sales and year-on-year changes follow: 195,000 PowerBooks sales (up 93 per cent); 201,000 iBook sales (up 8 per cent); 206,000 Power Mac sales (up 30 per cent) and 227,000 iMacs and eMacs shifted (down 24 per cent). Year-on-year CPU revenues climbed 15 per cent for a total of $1.3 billion.

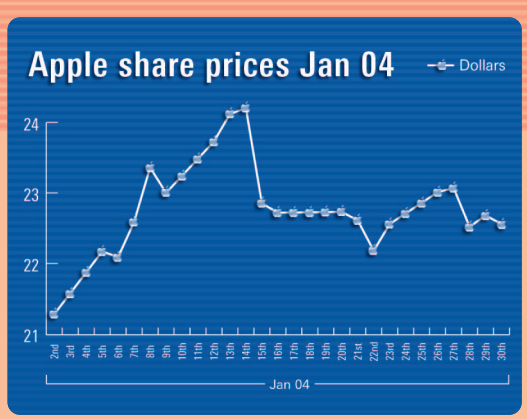
Anderson said: "I believe Power Mac sales can be sustained at about 200,000 units per quarter – some quarters will be a bit higher, some will be a bit lower."

On a global territory-by-territory basis, Apple's fortunes improved worldwide: while overall revenue rose 25 per cent from the year-earlier quarter in the Americas, global gains were more impressive. Revenues climbed 48 per cent in Europe, 13 per cent in Japan, and 55 per cent in the Asia-Pacific region excluding Japan.

Apple's global education market-share remained stable: sales to higher-education were up strongly year-on-year, while educational-segments sales declined.

Macworld.co.uk For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk)

$9m for Retail



Apple's own-branded retail outlets returned an impressive $9 million profit in the company's first quarter 2004, taking $273 million in revenue in the quarter – up 83 per cent.

Fortune also smiled on Apple's first own-branded retail outlet outside the US in Tokyo's trendy Ginza shopping district (pictured, right). The Ginza outlet's first month trading saw the store's tills rattle with higher sales than any Apple store opened so far, averaging over $1 million each week, Apple said.

The company plans to have 80 stores open by the end of the summer: one will open in San Francisco this spring, and a second Apple Store in Japan , in Osaka, will open in the autumn. The company is initiating programmes aimed at switchers and small businesses through its retail outlets.

Average per-store revenues were $4 million in the quarter, and the outlets attracted 5.9 million visitors in the quarter – equivalent to over 1,000 Macworld Expos. Apple's gross profit margins for the quarter shrank to 26.7 per cent, down from 27.6 per cent for the same quarter a year ago.

Apple spent more making sales: cost of sales rose from $1,066,000 in Q1 2003 to $1,470,000 million in the just-gone quarter. Research and development costs stood at $119 million for the quarter. **MW**

Another fine mess for Microsoft

Europe may fine Microsoft up to 10 per cent of its global annual sales as a draft ruling circulating shows the Commission's judges believe the software giant has once again abused its monopoly power.

The draft ruling says that the failure to grant rivals access to Windows computer code, which runs on over 95 per cent of the world's personal computers, is an abuse of Microsoft's dominant position, and it proposes ordering the company to reveal the code to rivals, said a source.

In a move that could help Apple and RealNetworks with their competing media players, the source said the draft ruling also finds Microsoft guilty of stifling competition in the media-playing software market.

Windows Media Player is bundled into Windows, giving it an advantage over rival products.

The source said the draft ruling does not demand the total separation of Media Player from Windows.

"The Commission doesn't appear to be pushing for the total unbundling of Media Player from Windows," the source said. Instead it seems the company will be forced to offer a version of Windows without Media Player, along with the bundled version currently on sale.

As well as certain requirements on its business practices, Microsoft looks likely to be fined for breaking EU antitrust laws.

However, the amount of the fine won't be decided until the week before a final vote to issue the ruling by the 20 commissioners at the Commission. Their vote is expected in March or April.

Microsoft said it is still looking for a settlement, but people close to the Commission said the chances of reaching an agreement are slim.

"Time is running very short for Microsoft," one person said, adding that the draft ruling triggers a series of final legal steps that must be completed before the final vote is taken. "There is little room to stop that process," the person said.

As it did in the US, Microsoft is likely to appeal a negative ruling, a process which (once again like the US) can take years.

The remedies imposed on Microsoft may not take effect until after the appeal is completed.

Paul Meller

TNT fails to deliver the goods

Apple resellers and customers have been experiencing delivery delays using the company's globally appointed courier firm, TNT, according to UK resellers.

TNT won Apple's business over a year ago, but in January UK resellers – who didn't wish to be named – claimed to have experienced misdeliveries and lost or stolen items. One said: "We have had issues with TNT."

There was an incident before Christmas when an order of G5s was misdelivered because the courier didn't read the address labels. He delivered our G5s to a customer who was supposed to be getting an HP printer. We got the printer."

Another claimed: "A few years ago I witnessed a TNT courier throwing Apple CRT monitors from the back of his lorry on to the ground – and with CRT monitors it only takes a slight knock and they don't work."

Whether products have allegedly been lost, stolen, or sent to the wrong place, such problems are a serious problem for all UK resellers. In one case, in which a consignment of PowerBooks went astray, one reseller was forced to endure a six-month wait for compensation.

TNT's alleged inability to deliver products is proving costly to resellers, who have already highlighted the problems to Apple UK – but that company's hands are tied by Cupertino's insistence on a global shipping deal.

A reseller said: "TNT is dreadful. We have £160,000 worth of shipment discrepancies from them. Products have been delivered to the wrong address, we have received deliveries meant for other resellers, and goods have been delivered damaged."

One reseller bemoaned: 'It's a far cry from two months ago. Then the whole process was a breeze." **MW**

Karen Haslam

Business briefs

- Adobe chairman and DTP innovator John Warnock sold over $6 million in shares in December, according to the US Securities and Exchange Commission (SEC). Warnock remains one of Adobe's largest shareholders.
- EMI is licensing its music to UK-based Wippit, a paid peer-to-peer service. Users pay $50/year for unlimited file transfer and downloading of licensed tracks. An EMI executive said: "We want to learn how to embrace P2P."
- Shawn Fanning and others involved in the original Napster service have launched Snocap, a company developing technology that would identify songs being traded on peer-to-peer services like Kazaa and Grokster and attach a price-tag to them.
- Jon Lech Johansen (aka 'DVD Jon') is to seek compensation from the Norwegian government following his acquittal on charges related to alleged copyright violation.
- EarthLink reported net income of $10.7 million for its fourth quarter ending December 31, 2003, compared to a loss of $36.9 million in the same quarter a year ago.
- BWCS's Wi-Fi Home Networking report predicts that by 2007 over 50 million homes in Europe, US and Asia will be Wi-Fi-savvy.

Harman sounds off

Harman Multimedia has announced the Harman Kardon SoundSticks II – a new version of its three-piece speaker system introduced in 2000. The new model features updated audio technology, touch volume control and analogue connectivity.

The system features two 10-watt satellite speakers backed by a 20-watt subwoofer to produce a bass response down to 44Hz. They are housed in a tubular, transparent enclosure. The speaker towers contain four Odyssey transducers that deliver frequencies beyond 20KHz, according to the company.

The SoundSticks II system, expected to cost £126, is compatible with all analogue stereos and desktop and laptop computers, as well as with game consoles, and digital music and personal CD players. The right speaker features capacitance touch control buttons that allow for direct access to volume control.

The JBL Creature II has also been announced by Harman. This three-piece speaker system is described by the company as "organic, unique and quirky".

JBL Creature II incorporates Odyssey transducer technology and JBL's speaker performance for "crisp midrange tonality and a stunning level of bass response", says Harman. The Creature is available in white and grey and the speakers glow from the bottom. It is expected to cost £64.

CU, 020 8200 8282

Stick around
The SoundSticks II system (above) employs a new computer-optimized multiband parametric equalization – this means listeners will experience clearer, cleaner sound and a more accurate reproduction of the artist's intent, says Harman.

TV or not TV?

Elgato Systems has unveiled EyeHome – a device that gives access to photos, video or music stored on a Mac via a television or home-entertainment system.

Apple's vice president of Worldwide Developer Relations Ron Okamoto said: "We're pleased that Elgato is bringing a digital-media player to the Mac, and giving Mac users more ways to enjoy their iLife content even when they are not sitting in front of their Mac."

EyeHome content is organized on the TV as it is on the Mac. It is controlled via a remote and does not require additional software. EyeHome also provides access to the Internet on the TV, and supports Safari bookmarks.

The EyeHome connects to the TV via standard video and audio connectors and supports MPEG-1, MPEG-2, MPEG-4 and DivX, JPEG and PNG, and, MP3 and AAC formats. It is expected to cost £206.

Elgato has also launched the £275 EyeTV 200 FireWire Digital Video Recorder. This is the latest version of the digital video recorder that allows users to watch, record, edit and archive high-quality, MPEG-2 encoded TV on the Mac.

CU, 020 8200 8282

One-hand keypad leap for CAD

FrogPad has introduced a one-handed, Bluetooth-enabled keyboard. The new 3-x-5-inch, 20-key keyboard incorporates FrogPad's patented ergonomic layout, which is designed around the 15 most-used letters in the English alphabet, offering what FrogPad claims is "a logical key layout and design that encourages correct ergonomic posture".

According to the company, most users of the new keyboard can achieve 40 words per minute after eight hours of training and practice. It comes with a built-in rechargeable battery.

FrogPad claims the keyboard is ideal for designers using CAD (computer-aided design) applications as they can keep one hand on the mouse at all times and freely input data via the keyboard with the other hand.

FrogPad expects to ship the keyboard in the second quarter of 2004. The UK price is to be confirmed, but is likely to be about £100.

www.frogpad.com

LightWave Xcode-bound

NewTek LightWave 3D – the 3D modelling, animation and rendering tool – is migrating to Apple's Xcode environment. The company also plans to optimize performance in OS X and Apple's G5 processor. The company expects a number of performance gains, and intends to introduce new features including faster rendering and faster inverse and forward kinematics. Other features will include: improved workflow; improved soft-body dynamics; and more powerful character animation. It is expected to cost £1,292.
CU, 020 8200 8282

MarkzTools updated

MarkzTools 5.5 – Markzware's content integrity XTension for QuarkXPress 4.1.1 and 5 – will convert QuarkXPress 6 documents ensuring protection by preventing file-content corruption. Enhancements in the update include Verify Saved Document and Save Temporary Copy. A grey preview tool enables conversion of a colour picture to greyscale. It costs £163.
0800 328 9911

Turn tables on 3D

Kaidan's PiXiMation creates 3D rotational object movies by hand with any free-spinning turntable, and uses advanced image-processing techniques to generate spaced and indexed image frames from a variety of video sources, such as the Apple iSight. PiXiMation also creates and saves QuickTime VR object movies as well as individual still-image files. It will cost £63.
www.kaidan.com

Stitcher 4 released

Stitcher 4 from Realviz is the latest version of the panorama software that enables the creation of high-quality panoramas. Version 4 offers the ability to interoperate with a wide range of images. Users can edit in the .PSD file format, and select the preferred interpolation method for the re-sizing of their images. A Best Rendering option enables the best-possible output within the resolution available, says RealViz. It costs £410.
01628 528 256

continues page 32

Apple updates

Apple has updated **AppleWorks**. Version 6.2.9 supports mice with scroll wheels, improves performance, reliability and printing, and resolves issues with Web-based templates and clip-art on networks using proxy servers, according to Apple.

iCal 1.5.2 is "easier and faster to use," according to Apple. It features a detachable Info Drawer, To Do alarms and notes, more keyboard shortcuts, the ability to publish or subscribe to calendars on servers located behind a firewall, improved alarms, support for events in multiple time zones, and stability and performance improvements, says the company.

Third-party updates

iBeeZz 2.2.1 from software.reboute.net enables users to determine when a Mac goes to sleep and when it wakes. It acts as an alarm clock, waking up the machine for scheduled backups.

Sibelius Software has updated its music-notation software. **Sibelius 3.1** features four new plug-ins, 16 new instruments, an Unregister Sibelius feature that allows Sibelius to be moved from one computer to another, and a number of improvements and bug-fixes.

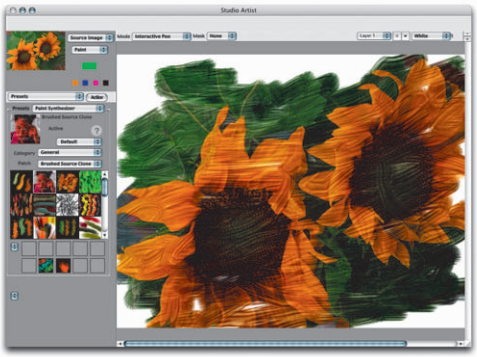
Boinx has updated **iStopMotion**, its stop-motion animation and time-lapse capture software. Version 1.2.1 improves quality when working with DV cameras, features speed improvements when capturing images, and now supports switching between multiple input devices.

YazSoft has updated **SpeedDownload** – its download manager and accelerator – to version 2.2. The update is optimized for Panther, adds a completely redesigned software tracking window, and includes a number of new features such as My Watch List for favourite Macintosh applications.

Intelligent painting

A new version of Studio Artist – Synthetik Software's graphics synthesizer – is now available. Version 3 "knows how to paint and draw," according to Synthetik. This is thanks to cognitive neuroscience investigations into the nature of visual perception in the brain. The package constructs an internal representation from a source image, and uses that to direct smart assisted painting and drawing.

The update features Interactive Paint Tools and Live Video Paint – combining dynamic user-configurable painting and drawing tools with a complete image processing and video effects suite.



Added flexibilities allow artists to create their own art tools or processes; New Vectorizer Raster to Vector Synthesizer allows for a wide range of user-customizable artistic raster image to vector regions effects; New Paint Synthesizer features incorporate live video feed directly into the Paint Synthesizer; and new Particle Paints with intelligent swarming allow a pen to be loaded with paint drops that simulate real-world behaviour of flowing liquids.

Other new features include a new vectorizer raster-to-vector synthesizer with EPS output capabilities; MSG (modular synthesized graphics) plug-in architecture; live video processing; enhanced animation capabilities; expanded image processing; and paint-synthesizer functionality.

The update is optimized for OS X, and includes over eight hours of QuickTime video tutorials and instructional guides. Studio Artist 3 costs £243. Registered users can upgrade for £98.

www.synthetik.com

'Next-gen' media tool debuts

eZedia has released what it is calling the "next generation in multimedia authoring software for the Web" – a native Mac OS X version of eZediaQTI 2, its interactive QuickTime authoring software for creating Internet content.

The company claims users can quickly combine and enhance video, graphics, animation, sound, VRs, and text to create Web sites, Internet banners, online presentations, and interactive videos "with no programming knowledge required".

eZedia president and founder Stefan Embleton said: "eZediaQTI 2.0 is the first of its kind to give users a quick-and-easy way to create rich-media Web-deliverable content as an interactive QuickTime movie."

The new release, which has been re-written in Cocoa and features a new interface, offers full AppleScript support to extend the tool's functionality, and automates repetitive tasks, according to eZedia.

Other new features include: the ability to customize button colours, shapes, and text; built in spell check; improved text handling with advanced formatting capabilities; and toolbar button access to the new eZedia Media Library containing themed templates and movies. It will cost £68.

www.ezedia.com

New Cube case apes G5 Mac

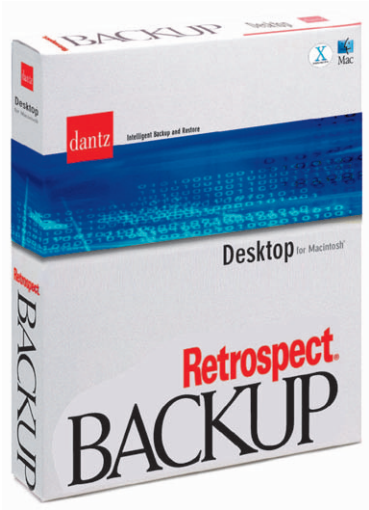
PowerLogix has announced a follow-up to its limited-run PowerCube cube casing. The ClearCube is an acrylic enclosure that improves on the original Cube box with better airflow so that CPU and video card updates are possible.

The ClearCube is larger than Apple's original Cube enclosure but smaller than the PowerCube at 8.5-x-8.5-inches. The body can be customized or left clear, and the anodized aluminum grille on the top mimics the Power Mac G5.

A special bracket and cable are also included with the ClearCube enabling movement of the Cube's heat-sensitive VRM card into the airflow. It costs £108.

www.powerlogix.com

Retrospect 6 released



Dantz has launched Retrospect 6 – the latest version of its backup-and-restore software for the Mac. Retrospect 6 protects both Power Mac G4 and G5 computers running Mac OS X Panther. It also backs up Xserve RAIDs, and supports SCSI and Fibre Channel tape libraries.

New features in Retrospect 6 include: no limit to the size of volumes that can be backed up or the amount of data stored in a Backup Set; no terabyte limit; and support for most SCSI and Fibre Channel tape libraries. It also boasts an improved user interface to manage drives, tapes, and cleaning tapes. Disk backups can span multiple FireWire or USB hard drives.

Three editions of Dantz Retrospect 6 are available. Retrospect Server backs up a local Macintosh computer and 100 networked clients – including servers – and is expected to cost £516. An upgrade version is available for £256.

Retrospect Workgroup backs up a local Macintosh computer and 20 networked desktop or notebook clients. It will cost £365, with upgrades for £145.

Retrospect Desktop backs up one local Macintosh desktop or notebook computer and two networked desktops or notebook clients – a full version is £97, and an upgrade is £43.

Retrospect 6 is not compatible with Mac OS 9, but Retrospect 5.1 is included for backing up in the older operating system.

Computers Unlimited, 020 8200 8282

'First' FireWire SAN unveiled

SANcube800 is to be introduced by MicroNet – with the claim that it is the industry's first FireWire SAN (Storage Area Network).

The SANcube800 "serverless storage network" delivers "extremely fast" connectivity and up to 1.5TB online with, claims MicroNet, "the speed and fault tolerance of a hardware RAID controller".

MicroNet also claims this is the only SAN that allows users of Final Cut Pro to share resources on multiple different editing workstations simultaneously, without requiring SCSI or Fibre Channel cards and cables. This is because the SANcube800 features Raid 5 and hot-swappable drives for data integrity.

MicroNet says that the SANcube800 is "engineered for digital content designers who create and transfer large mission-critical video projects on Power Mac systems". The company claims that the SAN leverages "the fastest peripheral bus ever created to enhance workgroup productivity by delivering up to 70MB/sec transfer rates".

The SANcube800 consists of a data cube incorporating five 7,200RPM ATA-6 hard drives – up to 1.5TB of online storage. It is hot-pluggable, offers RAID fault tolerance, provides share level data access, and features an integrated carrying handle.

MicroNet hopes to ship the SANcube800 in the UK this summer. Pricing is to be confirmed.

www.sancube.com

FileMaker auto data-sync tonic

SyncDeK 5 – a bi-directional asynchronous data-replication technology for FileMaker databases – has been released by WorldSync. The new version automatically tracks changes and synchronizes specified fields between distributed databases based on configurable rules, using commonly available Internet protocols, according to WorldSync.

The software, which is written in Java and leverages XML to manage data exchange while providing field-level conflict detection and resolution, is designed for use by remote sites and mobile workers, says WorldSync.

According to the company, synchronization is highly configurable and scalable, and can apply to individual data fields or entire FileMaker files across client/client, client/server or server/server networks.

It communicates with an accompanying plug-in for FileMaker Pro, enabling developers to control synchronization directly from within FileMaker.

SyncDeK Developer costs £833. SyncDeK 5.0 deployment licences cost £645 for SyncDeK Server and £128 each for SyncDeK Clients.

www.syncdek.com

Pro graphics card debuts

ATI Technologies has introduced the Radeon 9800 Pro Mac Special Edition video card for use with the high-end Power Mac G5. The card has 256MB of DDR memory, a 680MHz data rate, and a core engine speed of 380MHz. It is supported by drivers included within OS X and enables direct connection with Apple displays through ADC and DVI connectors. It costs £468.

CU, 0208 200 8282

Networking king

Channel Dynamics has announced a new PCI card manufactured by Sonnet Technologies. The new Presto Gigabit Ethernet card is a multispeed 10/100/1000 Ethernet PCI Adapter Card, which Sonnet claims runs at ten times the speed of current 100BaseT systems in an appropriate configuration. It is compatible with all 10/100/1000BaseT hubs, switches and routers, and costs £76.

0870 60 70 540

Final Cut keystroke fillip

Contour Design has released Key Composer, which lets users assign multiple keystroke combinations, or macros, to execute from a single button on the company's ShuttlePro 2 controller. According to Contour, Key Composer gives users of Final Cut Pro more control: enabling automation of repetitive multi-step tasks; and grouping of similar commands, views, or tools to a single button. A free download is available from the Contour Design Web site. The ShuttlePro 2 costs £99.

www.contourdesign.com

USB Server released

Keyspan has unveiled a USB Server that connects up to four USB devices such as USB hard drives, printers and scanners to be used and shared by client Macs on a LAN. It provides full-speed USB at 12Mbps, connects to 10/100 Ethernet networks via an RJ45 connector, and supports Rendezvous. It requires Mac OS X 10.2.8 or higher, and is expected to cost £82.

AM Micro, 01392 426 473

continues page 34

And the beat goes on

Digital Doctor has updated its showcontrolpro software for Mac OS X. The software allows control of all audio parameters and MIDI-capable outboard effects. Once a database has been set up, the songs can be arranged into a set-list for live performances. Version 2.0 allows control of live audio via MIDI so the engineer can focus on the mix, rather than worrying about changing FX patches manually, claims the company. Price: £111.
01920 872 341

Music to your ears

Voice of the GoatCactus is an algorithmic music-composition tool for Mac users that enables the creation of original music, without requiring knowledge of maths or music composition, according to GoatCactus. It creates musicians, gives them instruments, combines them with a conductor to form a band, and starts them playing. The user can influence the style of music, select instruments, and adjust the tempo. A multi-coloured view of the music is generated as it plays. It costs £18.
www.goatcactus.com

MusicMath goes X

MusicMath is now Mac OS X-compatible. Version 2.21 of the freeware that converts music values can calculate the time-stretching required for a sample if the tempo is changed, the time-stretching to apply if a sample is transposed, and the number of steps to transpose. It includes a tap delay and a BPM/sample converter.
www.macmusic.org

Remote iTunes app beta

TunesAtWork is beta software that claims to grant iTunes users access to their personal iTunes collections over the Internet from their Mac. The software acts as a Web server that runs on the user's home Mac and presents their music collection on a Web page. The free software requires Mac OS X, iTunes 4 and a high-speed Internet link. It will only stream files to up to four remote computers to combat piracy.
www.tunesatwork.com

iPod drives ahead

In what the company says is a world first, Alpine Electronics is to release a car stereo unit that lets an iPod connect to a car stereo and be controlled from there. The iPod Ready Interface kit is being built into selected 2004 Alpine in-dash receivers. The iPod connects to the stereo via a single cable, and can be operated through the stereo's buttons. Playlists, album, artist, and song information can be viewed on the unit's display.

It also charges the iPod's battery. Alpine hopes to offer the iPod Ready Interface kit in the UK later this year.
01908 611 556

Feel the burn

MP3Gym from Personalized Workout Systems (PWS) is a practical alternative to a personal trainer. MP3Gym is the first audio personal trainer recorded on MP3 files for MP3 players, and includes multiple workouts that can be created and stored – there are more than 100,000 routine combinations, according to PWS. It costs £15.
www.mp3gym.com

Be upstanding

The podboard from Alscher is an adjustable iPod stand that is fully customizable – templates are provided for anyone wanting to make their own skin. The stand is made of durable stainless steel, and features a cable holder. It costs £24.
www.alscher.ch

Stick around
The podboard can be modified with the supplied custom skins.

Free speech

Griffin Technology has announced iTalk – a new voice recorder for the Apple's iPod that will ship in April. The device can record from a source up to 100 feet away, and an external mic can be connected directly to iTalk for more recording options. It will cost £34.
AM Micro, 01392 426 473

iPod coveralls

RadTech has announced a new PodSleevz – a full-coverage protective sleeve case for third-generation iPods. According to the company the formfitting case is the first to fully envelope the iPod while allowing operation of the device's buttons through the case. It costs £24.
Radius Vision, 020 7340 0040

Audio streaming

XtremeMac has demonstrated an extended-distance, high-fidelity, wireless audio streaming technology that broadcasts from an audio source such as the iPod to a device at line-of-sight distances in excess of 300 feet.

XtremeMac has said it is developing a number of products based on this exclusive technology. The first will pair compact transmitter and receiver units, and let users stream wireless audio from a source such as an iPod or computer to a remotely located playback device such as a home or car stereo, wireless headphones, or portable speakers.

The transmitter is battery-operated and can be carried as an iPod accessory, the company claims. The product is expected to be available in Spring 2004.
www.xtrememac.com

continues page 36

ADSL of a modem

ADSL Nation has introduced the X-Modem CE, Compact Ethernet ADSL Modem. Finished in white and measuring 130-x-110-x-25mm the modem features an upright design to minimize its footprint, according to the manufacturer. It costs £58.
0845 125 9526

The write stuff

LetterWorks 1.5 is a tool for writing quality letters. The software looks after layout, formatting and default text as determined by stationery. It enables personalization of many letters at once via preset personalized greetings, and automates the process of filling in the receiver's address. A standard version costs £16. The professional version is £33.
www.objectpark.net

Photo tool updated

Econ Technologies has updated Portraits & Prints, its photo studio for Mac OS X that enables the enhancement and printing of photos, to version 1.3.2, adding features and fixing several bugs. There are now more optimal build settings for better performance, and a contextual menu has been added to the Red-Eye mode that allows the aperture size to be set. Portraits & Prints costs £11.
www.econtechnologies.com

Word up

Version 4.4 of the Ultralingua English and foreign-language dictionary is now available. The update includes improvements in indexing and data, and is OS X 10.3-compatible. The English Dictionary and Thesaurus includes updated data and notes on usage. Dictionaries cost £19 per language module.
www.ultralingua.com

Path well travelled

Xtream Path is a plug-in for Adobe Illustrator that allows more control over path editing and flexibility of workflow. It lets users manipulate paths in a more-intuitive way – it is possible to edit path segments exactly where required, the company claims. Xtream Path also boasts 36 tools and filters. It costs £88.
www.cvalley.com

Small is beautiful

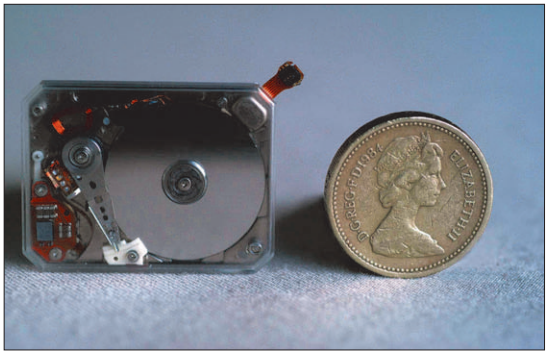
Toshiba has unveiled a sub-one-inch hard-disk drive. The prototype hard-disk drive is smaller than any currently on the market, and could start appearing in devices such as mobile telephones and digital-music players before the end of this year. The drive is the same length and width as an SD (Secure Digital) memory card and is only 1mm thicker, according to Toshiba.

The device itself (shown below at actual size) is a miniaturized version of the kind of drive found inside a personal computer. It features a recording platter, the media part of the hard-disk drive on which data is stored, that measures 0.85 inches in diameter. Most current desktop computers use drives with a 3.5-inch diameter platter while notebook computers usually use 2.5-inch drives. Even smaller drives are used in digital-music players – the iPod uses a 1.8-inch drive from Toshiba. The company said it expects to begin sample production in the middle of this year, and to begin commercial production in late 2004.

Vice president of marketing for Toshiba's Storage Media division Maciek Brzeski said: "We are aiming to get it into mass-market consumer electronics such as high-end phones, GPS (Global Positioning System) receivers and MP3 players."

0800 169 4527

Size matters
Toshiba's ultra-small hard-disk drive is meant for gadgets such as mobile phones and MP3 players.



Porsche drives on with DVD

LaCie is shipping a new lightweight DVD±RW drive designed by Porsche Design (above).

The LaCie FireWire Slim DVD±RW Drive is LaCie's first mobile device to combine DVD-RW and DVD+RW technologies. It comes equipped with FireWire and USB 2. The FireWire bus allows the drive to operate without an AC adaptor.

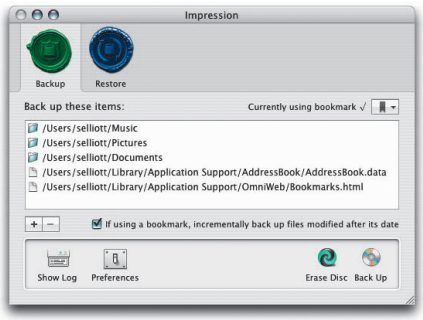
The drive has a 24x write speed, and is capable of reading standard DVD-ROM discs. It comes with an MPEG-2 decoder for viewing DVD-Video discs and CaptyDVD for creating interactive video DVDs. The FireWire version costs £292.

020 7872 8000

Second Impression

The Babel Company has updated Impression – its backup application for OS X.

Version 2.0 features a redesigned UI. According to the company, the windows are now resizable on a per-tab basis, features are addressable with less effort, and important elements are larger and use more easily readable fonts.



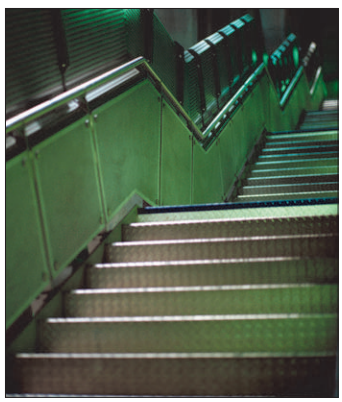
Other improvements include a new bookmark-based backup-management feature and full compatibility with OS X 10.3's FileVault feature. Scratch space can now be selected for disks other than the startup drive, individual files can be added to the backup list, unicode filename parsing has been improved, and several bugs have been fixed. Impression 2.0 costs £18.

www.babelcompany.com

Know your rights

Image Source has announced the launch of a new image-licensing system called Easy Rights. Easy Rights provides image exclusivity "far more simply than under the traditional rights-managed model," according to Image Source. Images available under Easy Rights are available for purchase for a limited time, thereby ensuring the freshness and relevance. The Easy Rights licensing system lets customers purchase images with total exclusivity for their chosen territory and time period.

www.imagesource.com, 020 7376 6789



Macworld.co.uk For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk)

The Internet has become so integral to us that a shut-down – accidental or intentional – could wreak Terminator-style havoc.

Cogito, ergo sum

There's a lot of nastiness on the Internet. There's piracy, pornography and extreme politics. While you may get the impression that it is to some extent governed, your bulging spam folder no doubt tells you differently. But should the world decide that is doesn't want the Internet any more, there's little anybody could do to kill it. Like cockroaches and Status Quo, it's one of the only things that could withstand a nuclear war. Because it's designed to reroute through an infinite selection of alternative gateways, stopping the Internet is close to impossible. At least that was the point of it in the first place.

The Internet in its original incarnation was supposed to make sure that if the Russkies took out Washington, or aliens melted Area 51, communications would be unaffected. That way, the president could still send the doomsday code to launch minuteman rockets to every city in the world. Thankfully, the Internet has evolved into something not entirely obsessed with the mutually assured destruction of the world. It is now in almost every nook and cranny of the globe: from Internet cafés in the Himalayas to broadband in Cornwall, the Internet has uncountable tendrils across the world. You can't just turn it off – nobody can.

The reason for this is those uncountable tendrils. There really is no way of knowing how many computers are connected at any give time. We can't even have a decent guess. On top of that, it could get a life of its own. I know that sounds like some science-fiction fantasy – in fact most of William Gibson's books and movies like The Matrix and Terminator work on that premise. But scientists – real scientists, not cartoon boffins or crackpots – believe that the Internet could become sentient (check out Linked by Albert-Laszlo Barabasi, ISBN 0452284392). I know it sounds nuts, and the chances may be small, but you never know.

So the Internet here to stay, it could become sentient, and like the Terminator, it's unkillable. At least if you were going to take out the Internet, you'd end up taking out a lot of other useful stuff too like electricity and water, not to mention a huge chunk of business and therefore the economy. So nobody in their right mind would want to shut down the Internet.

Unfortunately not everybody on the planet is in their right mind. Terrorism already exists on the Internet, from denial-of-service attacks on Web sites, to virus attacks such as the current MyDoom virus that targets Microsoft and the SCO Group. The MyDoom virus has shown how destructive a virus can be, but it seems to have been directed by pro-Linux users protesting anti-Linux policies. This is serious, but not as bad as what could happen if somebody truly wanted to bring the world to its knees, like a James Bond-style villain. Imagine if the MyDoom virus had been programmed to attack the world's stock markets or military communications.

Still, virtual attacks always get calculated into virtual billions of pounds that are theoretically spent or lost as a result of the attack. For the rest of us it's a mild inconvenience (OK, a big inconvenience if you run Windows), but it isn't life threatening. What if somebody really wanted to stir things up and take out all computer activity? What if somebody unleashed an electro-magnetic pulse (EMP) bomb in a few carefully chosen places? It could kick us back to Victorian times in an instant.

An EMP bomb is relatively easy to make; the US military may already be using them in Iraq. You don't need uranium or plutonium – a little gunpowder and copper wire will do the trick. The explosion creates a surge of electromagnetic energy; a relatively small device could generate a flash of power in the region of two billion watts. In an instant, any electrical equipment within range will short-circuit: that includes your computer, phone, TV, fridge and microwave, mobile phone, car, and even your iPod. You'd better have some candles and some food supplies, because if this actually happened we would be almost totally unprepared.

Some military establishments my have their computers in Faraday cages, which would shield them from invisible blasts. But the Internet would be severely disabled. Sure, it would be able to route information through alternative routes, but if enough hubs were taken out, or rather the right hubs were taken out, the results would be disastrous. Although the Internet can send information through an infinite choice of routes, the majority goes through big ISPs. In London there is a massive communications hub at Canary Wharf; there are similar places in the US and Europe. If each of these were knocked out there would be absolute mayhem. Overloaded routers would send traffic to smaller routers, which when overloaded would pass traffic to still smaller routers. It could all cascade into a total shutdown, and while it couldn't turn off the Internet, it could disconnect large swaths of it – rendering it practically useless for as a long as it would take to fix it. That could be a very long time.

The Internet has become part of our lives, and a major part of the world's infrastructure. Losing it would devastate much of the way business is done, which is amazing considering that only ten years ago businesses needed a lot of convincing that the Internet was important at all. We've now passed the point of no return. Let's just hope it doesn't wake up. Or if it does, let's hope it's friendly. MW

'Scientists – real ones, not cartoon boffins or crackpots – believe that the Internet could become sentient. I know it sounds nuts, and the chances may be small, but you never know.'

Michael Prochak

Apple's GarageBand will let non-musicians and pros alike create new tunes on their Macs – without having to win the lottery.

Music to our ears

The news gets more evil and twisted everyday, and frankly I'm tired of feeling Bushed. A moronic pensioner wins £9.3million on the Lottery... says it won't change her life and decides to keep her cleaning job. The government once again shows its concern for the big issues of our time by trying to extend its own brand of creeping nanny-state mentality to regulators on bath taps so morons don't scald themselves by running a boiling bath. And on top of that, days of column inches have been wasted on some boring, boorish, B-list TV presenter creating a phantom freedom-of-speech furore by claiming the Arabs never contributed anything to... well, anything.

Needless to say, I tend to adopt a distinctly Bill Hicks view when it comes to this sort of thing and am of the opinion that most people with loads of money – earned, conned or simply acquired – generally lack any semblance of imagination or creative thought when it comes to spending. Think of the political mischief you could make with that sort of money. Or failing that, if you were a dedicated discordian, you could buy a surplus Russian U-194 hunter/killer submarine, probably with crew, and just cruise around scaring people.

And when it comes to legislating to protect the public from bath taps, as far as I'm concerned, if someone doesn't have the sense to check a bath to see if it's too hot, then they deserve to be boiled. One less moron. As for our poor, misunderstood, yet annoying TV presenter, maybe someone ought to point out that the Renaissance in Baghdad took place four centuries earlier than in Spain and eight centuries earlier than in central Europe. And that's after they gave the world mathematics and science. Oh yeah, and writing. I understand they weren't bad at music, either.

Speaking of music, although you still can't download John Cage's 4'33" from the iTunes site, Apple has added a new music creation package to it's iLife ensemble called GarageBand. Despite the rather naff and dated name, as a simple, easy-to-use digital studio, the package doesn't look too bad. And, for wannabe musicians, or even pros who can't be bothered with the intricacies of say Cubase or Pro Tools, but still want to perform, record and create music, GarageBand offers a tidy little solution for turning your Mac into a digital recording studio, complete with instruments, pre-recorded loops, amps, effects and editing tools. I've even been told that somewhere in the box, you'll find virtual recording engineers lurking in the mix to help you out. It also includes more than a thousand riffs of professionally recorded Apple Loops, which are all royalty-free and played in a variety of moods and genres, on a plethora of different instruments.

Having written a number of books on music production and digital studios, I still find the whole process of working with a computer and sequencer somewhat unnatural. OK, using any sort of mechanical or digital recording equipment isn't exactly organic. But I still find that a lot of musicians I know, particularly those who still play real instruments rather than poncing around with decks or cutting up samples, actually prefer the now anachronistic analogue-style systems with real faders and a solid desk that you can actually feel and manipulate manually. There's also still a fierce debate concerning the quality, or particularly, the over-cleanness of digital sound as opposed to the warmer, perhaps more human tone of traditional tape. And although you can argue for hours with ear-wax junkies about frequencies, decibels, and the usual techie tosh, the bottom line for real musicians is still simply how can I create a sound that sounds the way I want to hear it.

Although it's adopted a simplistic approach, Apple has tried very to accommodate both points of view with GarageBand. Like most sequencers, you use Apple Loops as building blocks for songs. You can then place them in infinite combinations of unique arrangements, extend them, adjust the volume and balance of each track, or even fade the volume of a selected track in or out.

If you do happen to play a real instrument or sing, you can also plug a guitar, keyboard or microphone into your Mac to record your own parts. Then, if you want to, you can lean on GarageBand to supply all the backing tracks you think you need. As with the more-complicated established packages, you also have access to effects such as virtual guitar amps that let you emulate a variety of classic and modern sounds, and so on. Apple is also providing a collection of more than 2,000 additional Loops in a variety of instruments, moods and genres, over 100 new Software Instruments, more than 100 additional effects, and 15 amp settings. You can even splash out on a sleek, compact M-Audio Keystation 49e that lets you play any GarageBand instrument on a velocity-sensitive USB controller keyboard.

Probably the best thing about GarageBand is that it's part of the whole £39 iLife package – making it very good value indeed. That means that now if you just want to make your own music, you don't have to win the Lottery to afford to – and it's certainly cheaper than paying €250,000 for a used Russian submarine. As long as you remember not to scald yourself in the bath, you can have hours of fun making, playing and recording whatever sort of music you like. However, if you want to pull a Monty Python and argue about what the Arabs have done for us... well, that's up to you. MW

'For new musicians or pros who can't be bothered with Cubase or Pro Tools, but still want to perform, record and create music, GarageBand offers a tidy little solution for turning your Mac into a digital recording studio.'

Apple server software

Mac OS X Server 10.3

Manufacturer: Apple
Pros: Point-&-click Unix server monitoring and management.
Cons: Lack of integration with community-driven open-source software; Server Monitor for Xserves only.
Min specs: Power Mac G3; 128MB RAM; 4GB hard-disk space.
Price: Ten-client licence, £399; unlimited clients, £680; free with an Xserve.
Star Rating: ★★★★/8.6

If your organization is interested in taking advantage of open-source software but the thought of all the configuration work scares you, then Apple's Mac OS X Server may be the answer.

The release of OS X 10.3 Server, or Panther Server, arrives with the Panther desktop and shares many basic attributes; however, it is the server's architecture that sets it apart as an operating system.

Panther server will run on everything from G3 Power Macs to today's 64-bit G5. For this review we installed it on a 450MHz G4 using the "Install Mac OS X Server" icon that appears when the first installation disk is inserted. This first step requires the destination disk to be selected and formatted with the Mac OS Extended file format. After the base installation, which took about 25 minutes, a reboot is required and the second CD takes over.

This part of the installation goes through all the necessary base server configuration parameters such as the administrator's login details, the hostname, network address, directory server details, services to enable, and the system's time. Although Apple makes this process straightforward, it should be verified by a systems or network administrator to ensure everything is correct.

Panther Server in use

Once all the settings are in place, they can be saved to avoid having to repeat the configuration process if multiple servers need be installed. If you have a monitor connected to the server then Panther can be interacted with – otherwise it can be installed 'headless', with administration performed remotely. If there's a standout feature of Panther Server it's a set of monitoring and administration tools that can be used for remote management from any Panther desktop.

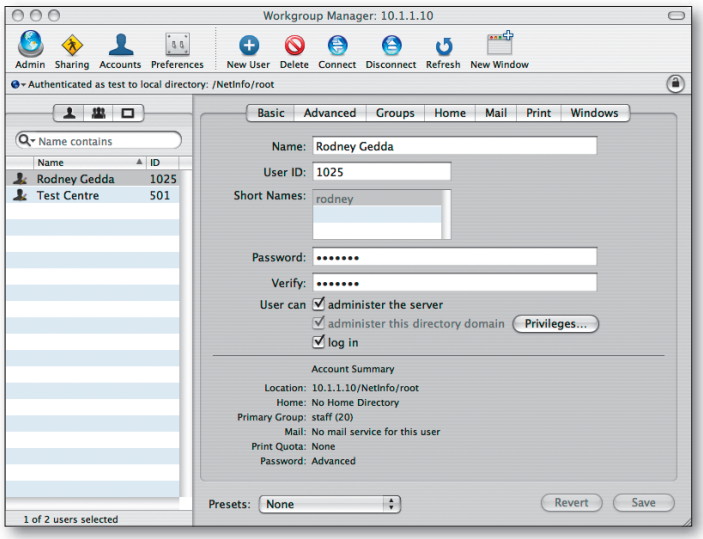
The Server Admin application is central to controlling what happens on the server. After connecting to the server via the administrator's login account, Server Admin displays all the supported services as well as their status. For example, the number of IMAP connections to the mail server can be controlled simply by entering the desired number in that field. This ease of administration spares users from manually updating the mail server's configuration files and is Panther server's most appealing attribute.

However, it must be understood that this point-&-click administration will not make the correct decisions for the user on how to manage the services. Knowledge of what to do with Server Admin is still required to prevent the Server from being misappropriated. For those new to server administration, the included 135-page 'Getting Started' manual will come in handy.

The general format of Server Admin's interface for a particular service is an overview, its log output for diagnosing problems, and the available settings.

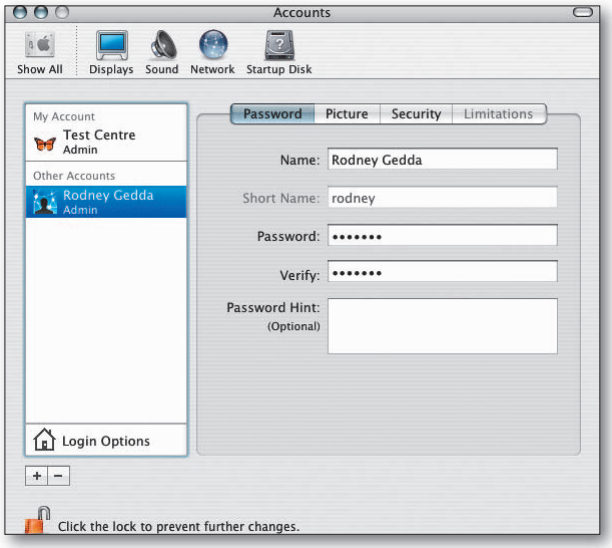
In addition to allowing servers to be remotely managed Server Admin supports drag-&-drop to copy a particular service configuration from one machine to another with a dedicated icon.

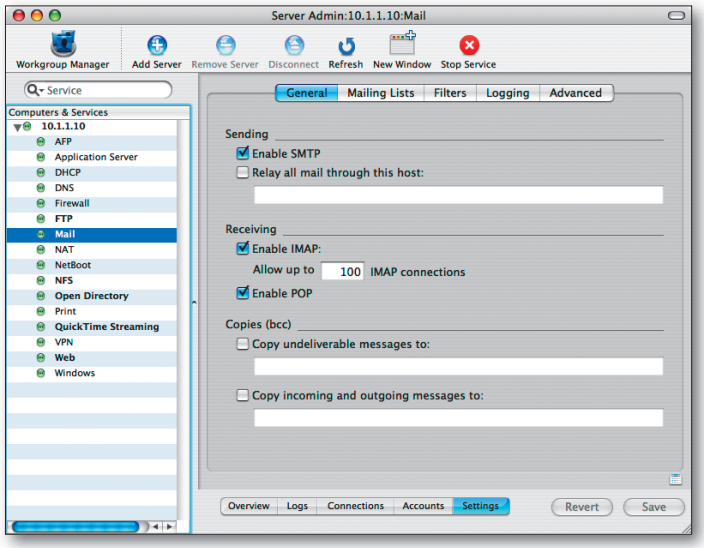
Server Admin could be even more powerful if the ability to update – or in the case of a security vulnerability, patch



Workgroup Manager
The functionality of Server Admin is extended with the Workgroup Manager application, which can be launched from the toolbar. Workgroup Manager allows a number of computers on a network to be administered within one interface.

Server Admin (below, right)
Server Admin's interface is divided into the computers and their services on the left, and the configuration options in the main area of the window. This works particularly well as more than one server can be managed from the same interface without clutter. The Add Server tool is used to add another server to the Computers & Services list, which can be collapsed and expanded as required.





– a particular service's core application. This is done routinely with other open-source operating systems, such as the BSDs and Linux, but Apple chooses to keep this under the Software Update umbrella.

It was easy to create another user account on the server using Workgroup Manager's New User tool. Set-up the new user's account name and password, then decide what type of privileges, such as print quota, that user should have – then save the account settings. The new account will then appear locally on the server's account list.

If changes need to be made to groups of users, this too can be done through Workgroup Manager. Workgroup Manager has a number of preferences, with the most important being whether SSL transactions should be used.

This is enabled by default. For servers that require a new installation, or some post-installation configuration, Panther Server includes the Server Assistant and Network Image Utilities that can be used to automate these tasks.

Also bundled with Panther Server is the Server Monitor application that checks the health of the system's core properties such as power supply and temperature. Server Monitor's alarm notifications also make it an ideal system response tool. Server Monitor in invoked in the same way as Server Admin, but unfortunately will work only if Panther server is running on an Xserve.

Applications

Of course, Panther server wouldn't be much of an update if it didn't include software enhancements to its Unix core and underlying applications.

For email, Postfix replaces the legacy Sendmail as the SMTP server and sits alongside the Cyrus IMAP and POP servers making for a highly scalable mail solution. For Web-based email access, Panther server uses the open-source Squirrelmail application. Also, with Panther server being Unix-based, it can be administered via the command line with a remote SSH connection. For Web-serving, Apache 2 has been included alongside the more-established version 1.3. For directory access, the LDAP-based Open Directory 2 is integrated with SASL and Kerberos.

Panther Server is also used to share files between computers on the network. Apple's own Apple Filing Protocol (AFP) remains available, and Windows clients can share files with Samba, which is now at version 3.

Macworld's buying advice

Panther server's management capabilities, combined with a stack of open-source software, makes it worthwhile for anyone running a workgroup. And the fact that it comes bundled with a server or can be purchased with unlimited clients make it surprisingly good value.

Rodney Gedda

Open-source applications

In keeping with Apple's new-found commitment to openness, Panther server includes a smorgasbord of open-source applications that are all well versed in production server environments under BSD and Linux.

Apple's iPod has been a phenomenal success, easily leading the high-capacity digital-music player market. It's as much the MP3 standard-bearer as Sony's Walkman was for portable cassette and CD players. Its 30 per cent market-share is simply amazing, especially as it started as a Mac-only product.

Nobody has ever accused the iPod of being cheap. Even today, prices range from £249 (15GB capacity) to £399 (40GB). Rumours before Macworld Expo San Francisco claimed Apple was to launch a super-cheap model for under £100. So when the company did announce its 4GB iPod mini, there was open-mouthed shock that it cost £199 – just £50 less than the lowest-priced iPod, which boasts nearly four times the capacity.

Apple is positioning the mini against the 20 per cent of the market that the iPod is priced out of. Its competition is largely made up of players based on low-capacity flash-memory rather than the iPod and mini's tiny hard drive, although a few other disk-based players do exist. The main competitors are Creative, Rio and Sony.

The mini's form factor will appeal to those who demand ultra portability *and* the best user interface in the business. The iPod is small, but is still a little chunky for gym and jogging situations. It's a bit like comparing a compact mobile phone with a domestic cordless model. And like a mobile, you can buy the mini in different colours. We'll go into a lot more depth about the mini's technical details nearer the time of its April release date. For the purposes of this preview, we'll concentrate on the mini's most contentious figure: its "high" price.

The closest MP3 player to the mini is Creative's MuVo2, which also packs a 4GB hard disk. It costs £280. The 1.5GB MuVo costs the same as the mini, £199. For £189 the MuVo2 X-Trainer – just 10 grammes lighter than the mini – has an anorexic 512MB capacity, which is enough for a mere 270 songs. If you want something cheaper the best option from Creative is the MuVo NX, which costs £120 but can hold a pathetic 30 MP3s. At £199 the 1,000-song 4GB iPod mini is easily the best value out there for this lower-capacity market. Surprised? I thought so.

The iPod mini is too expensive only when compared to Apple's own iPod, which in the light of these price comparisons actually appears something of a bargain. The sweetest choice is the £299 20GB iPod, which includes £87 worth of extras that the 15GB model doesn't ship with. If you can live without a dock, carry-case and wired remote, the 15GB is terrific value in today's market.

Everyone's up in arms about the £199 price purely as a reaction to the £99 rumours. You can see why Apple is so paranoid about such ill-informed gossip.

Apple's mini misses the masses who want to spend less than £100 on a digital-music player. For the moment these people are stuck with their portable CD players. Instead, the iPod mini will hook people who want the smallest possible device with a capacity of at least 1,000 songs. Prices will eventually fall, but until then digital music on the move remains available only to those willing to spend a little more for the best.

Simon Jary

Digital-music player

iPod mini

MACWORLD PREVIEW

Manufacturer: Apple

Pros: Ultra portable, small and lightweight; familiar iPod interface; price (compared to competition); choice of five colours.

Cons: Still not cheap enough for skinflints; if form-factor is not essential, iPod is better value; no neutral-colour cases.

Min specs: Mac OS X 10.1.5 or later; FireWire 400 for Macs; USB 2 for Windows XP.

Price: Expected to be £199 including VAT.

Mini to the max

Available in five colours, the iPod mini weighs 104g, and measures 3.6-x-2-x-0.5 inches compared to the iPod's 4.1-x-2.4-x-0.62. Its single clickwheel replaces the iPod's touch buttons and wheel, but otherwise works in exactly the same way as its older brother.

Consumer laptops

iBook G4 800MHz 12-inch

Manufacturer: Apple
Pros: Low price; compact; light; excellent battery life; slot-loading drive; up-to-date Wi-Fi options; USB 2.0.
Cons: Unimpressive performance; no free RAM slot.
Price: £849 including VAT.
Star Rating: ★★★★/8.4

iBook G4 933MHz 14-inch

Pros: Better performance than 12-inch model; larger, more readable screen; excellent battery life; slot-loading Combo drive; up-to-date Wi-Fi options; USB 2.0.
Cons: A little on the heavy side; no free RAM slot.
Price: £999 including VAT.
Star Rating: ★★★★/8.4

iBook G4 1GHz 14-inch

Pros: Decent performance; larger, more readable screen; excellent battery life; roomy hard drive; slot-loading Combo drive; up-to-date Wi-Fi; USB 2.0.
Cons: A little on the heavy side; no unoccupied RAM-expansion slot; extra performance and hard-drive capacity don't justify the price.
Price: £1,199 including VAT.
Star Rating: ★★★★/7.8

At a glance, the new iBook G4 notebooks look almost identical to their predecessors, but beneath their unchanged ice-white covers, they've undergone a major upgrade. If you're in the market for a mobile Mac at a bargain price, you no longer have to settle for last year's standards. In terms of core processing and connectivity technologies, this overhaul brings the low-end laptops in line with the rest of the Mac family.

Specifically, the new iBooks move up not only from the G3 processor to the G4, but also to a next-generation memory system. On the wireless front, they're the first iBooks to support AirPort Extreme (802.11g) networking (a £79 option), as well as Bluetooth connections (a £35 option) to compatible phones, wireless keyboards and mice, and other devices. (Plan ahead if you want Bluetooth: it's available only in built-to-order options.)

While the single FireWire port is still the old FireWire 400 flavour (1394a), the two USB ports now support version 2.0 of that standard, enabling much faster data exchange with USB 2.0 external drives, cameras, card readers, and scanners. The built-in optical drives are now slot-loading; the easily damaged trays of previous iBooks are gone. And of course, the new models come with Mac OS X 10.3 (Panther).

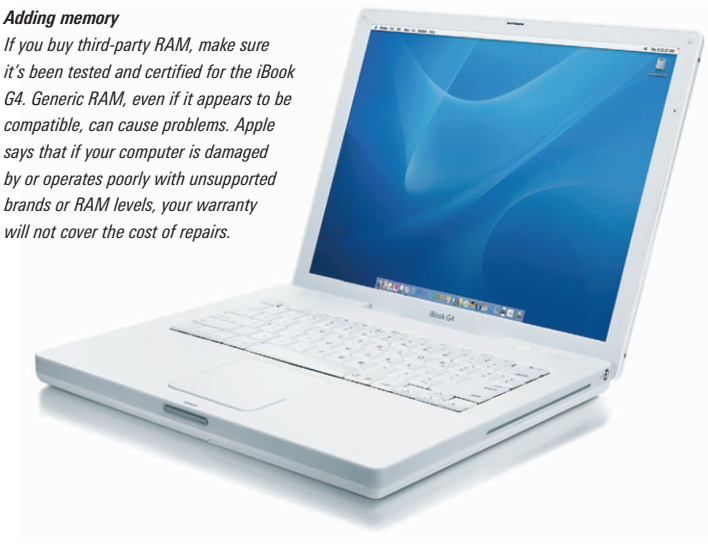
Same look, same weight

The last makeover of the iBook line, back in May 2001, included a dramatic redesign: the flamboyant colours and bulky curves of the original clamshell iBook gave way to cool white and rectangular lines – the same styling later adopted for the iPod. This time, Apple's industrial designers opted to stick with that distinctive look (See "New look").

The 2001 overhaul also resulted in iBooks that were almost two pounds lighter than the clamshell models. Unfortunately, that's another dimension that has scarcely changed: the entry-level version, with a 12-inch display, still weighs 4.9 pounds, while the two models with 14-inch screens weigh 5.9 pounds. And the new iBooks continue to deliver excellent battery life. We couldn't match Apple's promise of as much as six hours per charge, but in moderate use, we got more than four and a half hours with the default Energy Saver settings.

Adding memory

If you buy third-party RAM, make sure it's been tested and certified for the iBook G4. Generic RAM, even if it appears to be compatible, can cause problems. Apple says that if your computer is damaged by or operates poorly with unsupported brands or RAM levels, your warranty will not cover the cost of repairs.



Good, better, best?

Apple is offering three iBook G4 models in retail outlets and as standard configurations at the online Apple Store. In the past, the company generally offered two models with a 12.1-inch screen and only one with a 14.1-inch display. This time it has reversed that ratio: only the entry-level, £849 model, with an 800GHz G4 and a 30GB hard drive, has a 12.1-inch screen. The other two versions, a £999 model with a 933MHz processor and a 40GB drive, and a £1,199 version with a 1GHz G4 and a 60GB drive, have the larger screen – and the extra space and weight it requires.

Before you choose, remember that the larger-screen models don't actually display any more data than their smaller-screen siblings: all three models are limited to a resolution of 1,024-x-768 pixels. The difference is in the size of the pixels. When you squeeze that many into a 12.1-inch display, they have to be pretty small, and as a result, some people – especially those with vision problems – may find small type and other fine details hard to decipher.

If you're in that category, the 14.1-inch models may be worth the extra cost and weight. If you can easily read small type – and don't mind a slightly slower processor and smaller hard drive – you might want to opt for the 12.1-inch screen. You'll save money and come away with a notebook that's noticeably easier to haul around.

There's another change in the iBook line: a CD-RW/DVD-ROM (Combo) drive is now standard in all three models – even the lowest-priced option, which in the G3 generation came with a CD-ROM drive. (If ordering through Apple's Web store, you can downgrade the 14-inch models to CD-ROM and save £80; this option isn't currently available for the 12-inch model.)

All versions come with 256MB of RAM. In one sense, that's a welcome, if belated, step. Given today's low RAM prices and the demands of OS X, there was no good excuse for continuing to offer 128MB as standard equipment in most configurations.

iBooks tested

Best results in test.

	Speedmark 3.3 (Overall score)	Cinema 4D XL 8.5 (Render)	iMovie 3.0.3 (Render)	iTunes 4.2 (MP3 encode)	Adobe Photoshop CS (Suite)	Unreal Tournament (Average frame)
12-inch iBook G4/800MHz	78	9:21	1:40	4:56	3:35	12.9
14-inch iBook G4/933MHz	88	8:17	1:27	4:19	3:05	13.7
14-inch iBook G4/1GHz	91	7:54	1:26	4:05	2:59	14.1
12-inch PowerBook 1GHz	102	4:51	1:21	3:45	2:54	15.7
12-inch iBook G3/900MHz	75	8:00	2:07	6:28	3:56	13.4
	Longer is best	Shorter is best	Shorter is best	Shorter is best	Shorter is best	Longer is best

Speedmark 3.3 scores are relative to those of a 1GHz eMac (G4), which is assigned a score of 100. Photoshop, Cinema 4D XL, iMovie, and iTunes scores are in minutes:seconds. Speedmark 3.3 requires at least 512MB of RAM. Because all iBooks ship with 128MB of internal RAM, we tested the iBooks with 640MB of RAM. The PowerBook had 512MB of RAM. All systems were running Mac OS X 10.3.2. We tested MP3 encoding with an audio-CD track that was 45 minutes long, converting it from the hard-drive using iTunes' Better Quality setting. We used Unreal Tournament's Antalus Botmatch average frames-per-second score; we tested at a resolution of 1,024-x-768 pixels. The Photoshop Suite test is a set of 14 scripted tasks using a 50MB file. Photoshop's memory was set to 75 per cent, and History was set to Minimum.
– Macworld Lab testing by Kristina de Nike and James Galbraith.

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

The problem is that the new models have only half their memory soldered to the logic board; the other 128MB come in the form of a DIMM occupying the single RAM slot. If you want to add memory – as many users surely will – to get the most out of OS X, you have to throw away the 128MB DIMM to make way for a larger one. If ordering from Apple's Web store, you can avoid the issue by upgrading up front to 384MB of total memory, for £40, or 640MB, for £120. Officially, 640MB is the maximum the new iBooks support, but some suppliers (such as www.transintl.com) are offering 1GB units, boosting total memory to 1,152MB.

Architectural enhancements

Compared to the G3, the chip that powered all previous iBooks, the G4 processor not only runs at higher clock speeds but also adds AltiVec (also known as Velocity Engine), a special feature that speeds up some routines commonly used by graphics, multimedia, and cryptographic applications.

In addition, the iBook G4's new logic board uses a faster flavour of RAM (266MHz double data rate synchronous DRAM, also known as DDR266 or PC2100) and connects it to the processor via a faster bus (133MHz, up from 100MHz in the previous iBook generation).

The net effect is a welcome speed boost over the old G3 iBooks – even though the version of the G4 chip Apple uses in the new models has only 256K of on-chip Level 2 cache, half the amount in the version of the G3 used in the previous iBooks.

This speed increase ranges from modest in some operations to dramatic in others, particularly with software that uses AltiVec. In our benchmark tests, the 1GHz iBook G4 outscored the fastest previous iBook, which featured a 900MHz G3, by about 21 per cent overall. But if you look at the individual tests that score is based on, the improvement is much more substantial in some cases: rendering an iMovie and encoding a song in AAC format are 30 per cent to almost 40 per cent faster on the 1GHz G4.

The iBooks are still the slowest Macs on the shelf – even the fastest model lags behind the eMac and the base iMac and PowerBook configurations, although all of those systems also have 1GHz G4s. At least the gap has narrowed, and while the speed of the new models won't knock anyone's socks off, they don't feel as if they're constantly labouring under OS X's demands, as older and low-end G3 iBooks did.

Macworld's buying advice

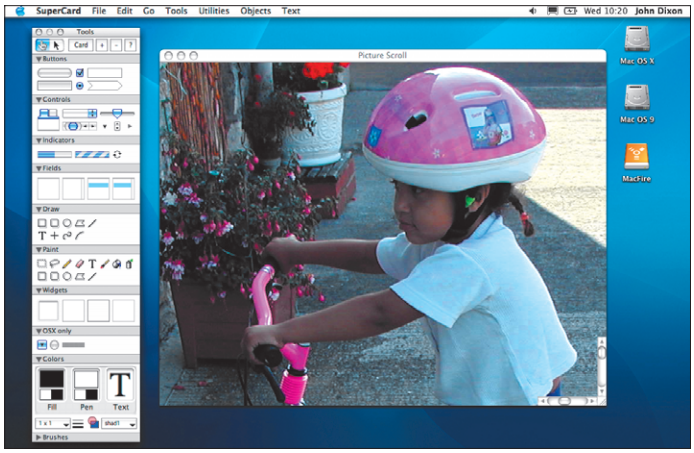
Unless you have problems with its small screen, the standout in the new iBook G4 line is the £849 model. By today's standards, it's a bit of a laggard in performance, but in other respects – price, weight, and features – it represents impressive value. In fact, aside from the speed penalty and a few features most users will never miss (such as a DVI-out port, an audio line-in jack, and support for extended-desktop mode with external monitors), it's a remarkably close match for the entry-level 12-inch PowerBook, which costs half as much again at £1,299.

Between the two 14-inch iBooks, our choice is the £999 model with a 933MHz processor. The slightly better performance and larger hard-drive (60GB versus 40GB) of the 1GHz hardly justifies the price difference – especially because if you have an iBook built to order, you can upgrade the 933MHz unit's hard drive to 60GB for just £40 more.

Henry Norr

New look

The new models feature the same compact design, sturdy feel, and white polycarbonate plastic case as their predecessors. Aside from the new optical-media slot, the only noticeable change is that the keys are no longer translucent.



Multimedia authoring

SuperCard 4.1.2

Publisher: Solutions Etcetera
www.supercard.us
Pros: Proven development environment.
Cons: Not keeping up with what Mac OS X has to offer.
Min specs: Mac OS 8.6 or OS X.
Price: Standard Edition, $179; Developer Edition, $279; Standard Edition Upgrade, $129.
Star Rating: ★★★★/7.3

SuperCard is a rapid application development (RAD) tool, a multimedia development environment, and a presentation creator. It's a great tool for developers, multimedia publishers and teachers.

Since the first release of SuperCard for Mac OS X a large number of bugs have been fixed, many of them not down to poor programming on behalf of Solutions Etcetera but because Apple keeps changing the rules as it develops Mac OS X.

With Panther's release the look of many of the Aqua controls has altered significantly. The tab control and group boxes, for example, have been updated for this release.

However, not all the controls that Apple has introduced since the arrival of Mac OS X are covered. SuperCard 4.1.2 supports sheet windows, for example, but not drawer windows or the brushed-metal look, which is surprising considering the use Apple makes of them in Panther's Finder.

SuperCard 4's Developer Edition includes an additional editing environment as well as the Runtime Editor. SuperEdit, which is a separate application that is exclusively used for building and editing SuperCard Projects, has advantages over the RTE in certain situations.

Script editing

SuperEdit is a single-purpose editor that is optimized for building SuperCard Projects. In SuperEdit, your scripts do not run. For example, if you need to change something fundamental about a project, such as adding a Window or resource, it's easier to work in SuperEdit.

To better accommodate the OS X file-system layout and permissions scheme, the default locations where new files are created when no path is supplied has changed from the SC pouch to the desktop.

A new function, supportsExclusive FileAccess(<path>), lets users check whether or not exclusive permissions are supported on any volume under the Mac OS version SuperCard is running in. If this function returns true, then the scripter can be confident that attempts by multiple copies of SuperCard/standalones and/or SuperEdit to open that project at the same time will not end up damaging the file.

The import of JPEGs has changed to use QuickTime instead of the image-compression manager and the ability to import pictureData directly from variables has been added. SuperEdit 4.1.2 includes substantially reduced memory requirements for importing pictureData.

Macworld's buying advice

Sadly, despite the improvements and the great number of bug fixes, I get the feeling that SuperCard isn't keeping up with the competition. It's a year on from the first SuperCard version to run under Mac OS X, and there are still no built-in database functions or socket connections, while both REALbasic and Revolution are making the most of being able to connect to various database flavours while connecting seamlessly to the outside world.

John Dixon

Runtime Editor revamp

SuperCard 4.1.2 includes new versions of the SuperCard Runtime Editor and SuperEdit. Now when returning to SuperEdit from SuperCard after SuperEdit's run command has been used, SuperCard will now automatically return you to the copy of SuperEdit that executed the 'Run' command.

Reverb-design tool

Space Designer

Publisher: Emagic www.emagic.de
Distributor: Sound Technology, 01462 480 000
Pros: Produces extremely realistic reverb and effects using impulse responses.
Cons: Only available for Logic; selection of Impulse Responses could be better.
Min specs: Mac OS 9.1 or OS X 10.2; 400MHz G3; 256MB RAM recommended); free USB port for XSKey.
Price: £449 including VAT.
Star Rating: ★★★★/7.5

Room to manoeuvre

Interestingly, there's a selection of Emagic rooms – rooms within the Emagic building itself – including Dr Gerhard Lengeling's room. Sadly, this room sounds rather cold and uninviting… perhaps Gerhard should use Space Designer to create some more pleasant artificial ambience in his own room!

Space Designer is a new plug-in for Logic that uses a convolution process to produce reverb that is virtually indistinguishable from that of a real room or hall. The idea of recording an impulse response then using this to recreate the sound of a room is similar to the idea of recording audio samples to recreate the sound of a musical instrument. Using a real-time calculation process (convolution), Space Designer merges the input signal with a reverberation sample (the impulse response or IR) taken from any acoustic space such as, for example, a room, hall, or cathedral. The result sounds as if the input signal had actually been recorded directly in the sampled room.

Just as a conventional sampler can incorporate synthesizer-like filters and envelopes to let you 'shape' the sounds the way that you want, Emagic's Space Reverb has filters and envelopes to let you 'shape' your own spaces. Space Designer's volume, filter, and density envelopes can be controlled using its numerical parameter fields. Envelope shapes can be also modified graphically from the screen display.

The user-interface is attractive – making it a pleasure to work with – and Space Designer competes well technically. The filter can be a 6 or 12dB/octave, low-pass, band-pass or high-pass type and, like all Emagic plug-ins, Space Designer supports sample rates up to 192KHz.

Emagic has been busy taking impulse responses from all the popular studio reverb units – although they have slightly coded the names, perhaps to avoid copyright problems. So, for example, Hamamatsu is code for Yamaha, whose headquarters is in Hamamatsu, Denmark is for TC Electronic, Lexington is for Lexicon, and so on. Vintage gear includes a Moog Spring and an old amplifier spring reverb. There's a selection of synthesized IRs including 'Endless Space Drone' and 'Muffed Gate', and there are lots of outdoor spaces (woods, fields, plains and mountains) that should keep ambient fans happy.

There are plenty of special effects reverbs as well, such as 'Black Hole', 'Oh My Buffer' and 'PulsedFormantMorph'. And you can always record your own impulse responses if you prefer.

Macworld's buying advice

Space Designer is an essential buy for Logic users who need realistic reverb and outboard simulations. Space Designer ships with over 1,000 impulse responses – ideal for music producers and sound designers – although the quality is variable. Altiverb has been around longer – about three years – and has fewer, but higher quality IRs. There's also competition from the new Waves IR-1, which has a much better library but costs more than twice the price.
Mike Collins

Ambience creation

Altiverb

Publisher: Audio Ease www.audioease.com
Distributor: Unity Audio, 01440 785 843
Pros: Provides satisfying and realistic-sounding reverberation for popular applications such as Pro Tools and Logic.
Cons: Needs the fastest computer for best results.
Min specs: 700MHz G4 (G4 upgrade cards not supported); Mac OS X 10.2; Pro Tools 6.01; Pro Tools 24|Mix or Pro Tools HD hardware.
Price: HTDM/MAS/VST/RTAS/AU OS 9 & OS X, £505; Altiverb MAS/VST/RTAS/AU Mac OS 9 & OS X, £315. Prices exclude VAT.
Star Rating: ★★★★/8.5

Demo on the CD

Altiverb, introduced about three years ago, was the first sampled reverb plug-in to become widely available – but you needed Digital Performer to run it. Now it's available in all the popular formats. Altiverb doesn't produce reverb itself. Instead, its convolution algorithm combines a dry input signal with an impulse response measurement that was originally recorded in a real acoustic environment – creating a much more realistic reverb effect than standard digital reverberation processors.

The controls couldn't simpler. Choose an impulse response using the pop-up selector in the middle of the window. The large knob at the left adjusts the length of the decay by applying an exponentially decaying envelope to the impulse response – so you can only shorten the tail. Two small knobs adjust the wet/dry balance between the effected and original signals. A third, marked pre-delay, delays the wet or dry signals in relation to each other to create special effects or to improve stereo imaging.

When selecting a response, a picture appears at the right of the window. Buttons display photos showing how the impulse response was recorded. A layout diagram explains how the speakers and mics were set up. Running audio through Altiverb produces the same effect as if the source

sound was played back through these speakers in this acoustic space and then re-recorded using these microphones.

Detailed instructions are included on how to make your own impulse responses, and you can use these to capture 'acoustic signatures' of any non-time-variant systems – from favourite room or hall to your favourite outboard gear, microphones or guitar amplifiers.

Altiverb is compatible with Pro Tools HD Systems and can be used in high sample-rate sessions – even though it currently uses 48KHz IRs. Altiverb downsamples incoming signals at higher sample-rates (such as 96KHz) to 48KHz, adds the reverb sound, then upsamples the output back to the higher sample-rate used in the session. This is reasonable, as it minimizes the processing load. HTDM plug-ins use the Mac's processor – not Pro Tools DSP chips. This is good for Pro Tools users who never have enough DSP, but you'll need a fast Mac. As the manual puts it, "Altiverb taxes the processor severely" – and it does!

Macworld's buying advice

Compared with Emagic's Space Designer, Altiverb offers better 'classic' reverbs, while Space Designer has more special effects. The main competition for Altiverb is the new Waves IR-1 sampling reverb. This has an even more comprehensive IR library than Altiverb, but costs significantly more. The IR-1 offers more-detailed control of the reverberation parameters and uses state-of-the-art 96KHz/32-bit impulse responses, but lacks Altiverb's appealing simplicity and places a much heavier load on a Mac's processors. If you have to make a choice, Altiverb fills the middle ground nicely.
Mike Collins

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

RAID backup array

Media Bank HS-R

Manufacturer: Miglia
www.miglia.com 0870 747 2988
Pros: Almost idiot-proof; safe as houses.
Cons: If you accidentally erase data it will be deleted from both drives.
Min specs: FireWire (preferably FireWire 800).
Price: Base unit with no drives, £299 excluding VAT. Various configurations of drives are available.
Star Rating: ★★★★/8.3

Backing up data used to be easy: just copy your files to a floppy disk. OK, that was 15 years ago and now it would take a mountain of floppies to archive even the smallest modern hard drive. But hard-drives have always outpaced backup media in capacity and speed, so a solution is needed, especially in this era of massive video, graphics and audio files. Miglia has a solution in the MediaBank, a RAID array ready to take a pair of hard drives, which negates the need for backup at all.

The idea is simple enough: hard drives are so cheap now that you can use them for backup. By mirroring two drives, you write data to both of them simultaneously. The FireWire 800 interface means this can happen very quickly – so there's no slow-down to back-up. If a drive fails, no data is lost because there's another drive with the data available. Simple – foolproof, even. At least that how it looks at first glance.

What mirrored drives don't allow for is the kind of human error that accidentally erases your data. If it's deleted on one drive, it's deleted on both. So it isn't entirely foolproof, but it's pretty close.

You can populate the drive bays with any ATA drive, there is even a third drive tray for extra backup features. For example, you can remove one of the two drives and take it off site for extra security, then replace the missing drive with the spare and the RAID will kick in and immediately start mirroring the data.

Another security feature is Kensington K-Lock support. This is physical security that means you can lock the drive down to deter thieves. The last thing you want is your safe backup to be stolen.

Macworld's buying advice

If you regularly backup your files, you're in a minority. The Miglia solution gives peace of mind with minimal effort. It isn't particularly cheap, but compared to the cost of replacing lost data, it's money well spent.
David Fanning

InDesign plug-in

Adobe InDesign CS PageMaker Plug-in Pack

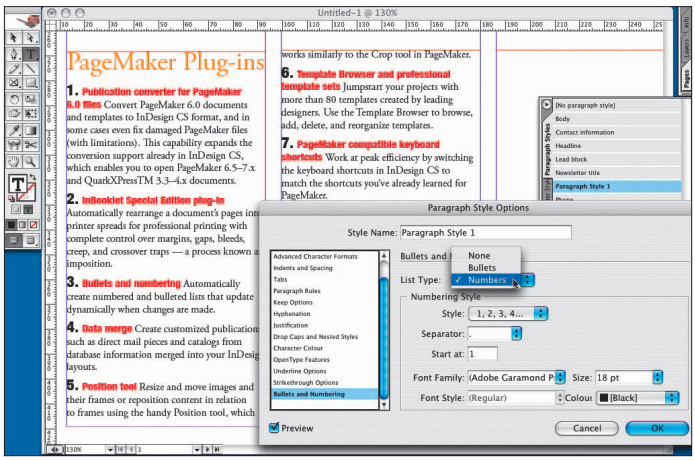
Publisher: Adobe
www.adobe.co.uk, 0870 606 0325
Pros: Automated bullets and numbers; basic imposer; templates and training videos.
Cons: Some plug-ins are over-sold; pointless Position tool; terrifying PageMaker toolbar.
Min specs: PowerPC G3; 128MB RAM; 237MB hard-drive space; Mac OS X 10.2.
Price: Plug-in Pack only, £39; including InDesign CS upgrade, £289.
Prices exclude VAT.
Star Rating: ★★★★/7.5

Bite the bullet
For several years we've been asking why InDesign doesn't have a bullet or numbering feature like PageMaker. Buy this Pack, and you can have it at last.

Adobe's New Year present to the world was to terminate PageMaker, the original program that gave rise to the expression 'desktop publishing'. Previously touted as a business person's alternative to the new graphics-heavy world of page-layout programs, PageMaker 7.0 is finally giving way to its younger sibling, InDesign CS. To encourage the vast numbers of devoted PageMaker users to make the change, Adobe has developed a set of plug-ins to help make the transition less traumatic.

We say 'developed', but a more accurate description might be 'cobbled together'. These plug-ins do not make InDesign CS look or work like PageMaker; rather, they mimic a couple of features that PageMaker users might otherwise be aghast at losing. For example, InDesign CS doesn't offer any of the basic imposition features available when printing from PageMaker, so Adobe has thrown in a Special Edition (cut-down version) of ALAP's excellent InBooklet third-party plug-in. This lets you set up basic 2-up, 3-up and 4-up imposition flats with custom bleeds and crops. In another example, the Plug-In Pack includes a Data Merge palette that supports simple automated data-merging on the page, again something that PageMaker does but which InDesign CS alone doesn't.

There are a few patronising touches, such as the insertion of PageMaker's Crop tool (now called the Position tool) into the InDesign interface, and the availability of something similar to PageMaker's Office-like button bar. Our view is that InDesign has



enough tools already, thank you – although we understand completely why InDesign's normal selection tools are baffling to most people. But that terrifyingly wide bar of microscopic, illegible buttons is awful: switch it off and leave it off.

Despite all this, we recommend every InDesign CS user buys the Plug-In Pack purely for the Bullets and Numbering plug-in. This automates bullets (use any glyph you like) and numbers (arabic, latin) for paragraphs or even just simple lists, and they can be saved within paragraph style sheets. You can customize the bullet/number size, the tab space, colour and more. InDesign users have been demanding this feature since version 1.0, and now here it is at last.

General newcomers to InDesign CS, not just PageMaker users, will also appreciate the CD-based training videos included in the Pack, while the InDesign program Help documentation has been rejigged slightly to suit PageMaker upgraders. Some of the other elements in the Pack are over-sold somewhat, such as the PageMaker keyboard shortcuts and Publication Converter, which appear to offer features that InDesign CS essentially supports already. The Template Browser is cute but some more templates wouldn't go amiss.

Macworld's buying advice

PageMaker users might appreciate the helping hand, but it isn't exactly a full-body massage. Then again, forget PageMaker: the Bullets and Numbers plug-in alone makes the Pack an essential purchase for every InDesign CS owner.
Alistair Dabbs

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Macworld reviews photo printers

Epson Stylus Photo R300

The devil's in the detail

Colour fidelity is important, but the ability to bring out fine detail is also a big issue. With inkjet technology, this depends on two things: the size of the individual ink droplets, and the accuracy with which the printer can place them. Resolution specifications aren't a reliable guide here because they simply state the accuracy with which the printer attempts to lay down ink drops, not the accuracy with which they succeed in doing so. Droplet size is a slightly more reliable guide, but our testing showed that even these specifications can mislead.

Lately, anyone who's paying attention has seen a stampede of multipage ads in national magazines, meant to brand the term 'digital photography' in the mind of the average consumer. Indeed, the allure of taking photos with a digital camera and printing them how and when you like is hard to resist.

It's in this context that we view the latest round of photo printers that produce photos as large as 8-x-10 inches. Straddling the often fuzzy line between consumer- and professional-level devices, these products offer features such as direct printing from camera storage media with no computer or image-editing application required (see the boxout on page 51"). But most are also capable of producing output that would please the hardcore Photoshop geek. In this roundup, we looked at two new printers from Canon – the **i905D** and the **i965**, both £250 – Epson's £129 **Stylus Photo R300** (left), Hewlett-Packard's £249 **Photosmart 7960**, and Lexmark's £59 **Z705**. We also included an outlier, the £399 **Olympus P-440**, which uses dye-sublimation, rather than inkjet technology to produce prints.

We used several criteria in judging the photo printers. The quality of the output had to be at least as good as that from a one-hour photo store, without your having to jump through hoops to get it. The printer needed to be affordable, not just to buy but also to maintain. And we wanted the winner to be reasonably speedy; otherwise, you may find that it's faster to walk to that one-hour photo store.

What's inside

All of the inkjets use six inks for photo printing: cyan, magenta, yellow, black, light cyan and light magenta. The Epson and Canon devices use individual cartridges for each ink – a potential money-saver since you can replace just the ink that's run out – while the Lexmark and HP printers use one tricolour cartridge for cyan, magenta, and yellow, and a second cartridge for the light photo inks. With the Lexmark, you swap out the light-photo cartridge when you need to use the black-only ink cartridge. On the HP, the black ink is the only one you swap out: colour and special photo inks are always installed, and a third cartridge slot holds either a black-ink cartridge for text or a special photo-grey cartridge (included) for black-&-white photos.

The Olympus P-440 is a dye-sublimation printer that uses cyan, magenta, and yellow dyes with a clear coating applied over the colour to prevent damage from fingerprints. Unlike inkjets, dye-sublimation printers use the same amount of resources regardless of the size or colour composition of the output. The fixed cost is just under £2.50 per print.

A photo printer isn't much use if what you see on your monitor doesn't resemble what you get from the printer. To test colour accuracy, we printed our standard test image to each printer using three different colour-matching methods: the printers' default settings, ColorSync colour matching, and a custom ColorSync printer profile created with GretagMacbeth's Eye-One Photo colour calibrator (£995 plus VAT; www.i1color.com). The test image is a TIFF file saved in Lab colour, so the printer profile is the only one that affects the colour reproduction. The test image contains fine details in highlights and shadows (shiny metal and coffee beans); memory colours (colours we can identify as right or wrong because we know what colour something is supposed to be – a red bell pepper, for example, in an image of fruits and vegetables); and a variety of textures from cloth to plastic to wood grain. It presents a considerable challenge.

The verdict

Our judges (a panel of experts made up of Macworld editors) gave the Epson R300 the highest marks for colour fidelity at the default settings, followed by both Canon printers and the Photosmart 7960, all three of which produced similar results (and which would benefit from better included colour profiles). The Olympus P-440 didn't fare quite so well, particularly when printing dark blues, but nonetheless produced acceptable results. The Lexmark Z705 was the only printer whose results were deemed unacceptable, with strongly oversaturated reds that made the cherry tomatoes in the test image look as if they were grown near Sellafield.

The Lexmark was the only printer that really needed a custom profile.

Photo-printers tested

Best results in test.

	Timed results			Juried results			
	8-x-10-inch photo	8-x-10-inch photo	4-x-6-inch photo	Colour photo		Greyscale photo	Print from media card
	Highest resolution	Second-highest resolution	Highest resolution	Colour fidelity	Detail	Photo quality	Photo quality
Canon i905D	7:14	3:43	3:29	Good	Good	Good	Very good
Canon i965	2:19	1:29	1:21	Good	Very good	Good	N/A*
Epson Stylus Photo R300	7:17	4:22	3:54	Very good	Good	Flawed	Good
HP Photosmart 7960	11:32	5:51	5:22	Good	Very good	Good	Good
Lexmark Z705	25:45	13:12	14:03	Unacceptable	Unacceptable	Flawed	N/A*
Olympus	7:03	N/A*	2:56	Flawed	Flawed	Flawed	Good
	Shorter is best	Shorter is best	Shorter is best				

All scores are in minutes:seconds. We tested the printers on a 1GHz Power Mac G4 with Mac OS X 10.2.6 and 512MB of RAM installed. We set displays to 1,024-x-768-pixel resolution and 24-bit colour. We used Adobe Photoshop 7.0.1 to print the photographic images. We recorded the time each printer took to print an 8-x-10-inch photo at both its highest- and second-highest resolution settings. We recorded the time each printer took to print a 4-x-6-inch photo at its highest resolution settings. A panel of experts looked at a variety of prints and rated each as Outstanding, Very Good, Good, Flawed, or Unacceptable. *N/A=not applicable. The Olympus P-440 has only a highest resolution. The Canon i960 and the Lexmark Z705 do not print from media cards. **Macworld Lab testing by James Galbraith.**

The lineup
(From left to right) the Canon i905D, Canon i965, Epson Stylus Photo R300, HP Photosmart 7960, Lexmark Z705, and Olympus P-440.

Model Star Rating Price (including VAT)	Canon i905D ★★★★/8.6 £250	Canon i965 ★★★★/8.4 £250	Epson Stylus Photo R300 ★★★★/8.9 £129	HP Photosmart 7960 ★★★★/8.3 £249	Lexmark Z705 ★★★/5.5 £59	Olympus P-440 ★★★/6.6 £399
Pros	Relatively speedy; best computerless printing; individual ink cartridges; CD printing.	Very fast; best detail reproduction; individual ink cartridges; CD printing.	Excellent colour matching; widest range of computerless printing support; CD printing; individual ink cartridges.	Decent colour; excellent detail reproduction.	Inexpensive.	Fast printing on multiple copies of 4-x-6-inch images.
Cons	Included ColorSync profiles need improvement; expensive.	Included ColorSync profiles need improvement; expensive.	Detail reproduction not as good as that of the Canon i965D or HP Photosmart 7960.	Expensive; rather slow.	Slow; poor quality output.	Expensive; lacklustre print quality; included ColorSync profiles need improvement.
Contact	0121 680 8062 **www.canon.co.uk**	0121 680 8062 **www.canon.co.uk**	08702 416 900 **www.epson.co.uk**	08705 474 474 **www.hp.com/uk**	08704 440 044 **www.lexmark.co.uk**	020 7253 2772 **www.olympus.co.uk**

At the default printer-driver settings, the Lexmark produced some truly garish colours that our judges unanimously agreed were poor. Printing with the custom profile improved matters dramatically, but it's certainly unrealistic to expect buyers of a £59 printer to resort to a £995 profiling solution. Even with the custom profile, the Lexmark print still didn't approach the colour fidelity that the other printers produced without any profile.

Detail matters

A closer examination of the prints made with custom profiles put the Canon and Epson printers at the head of the pack, followed closely by the HP Photosmart 7960, which didn't do quite as good a job on dark colours. The Olympus P-440 produced decent but unspectacular results, with too much contrast and too little highlight detail.

The two printers that produced outstanding detail were the Canon i965 and the HP Photosmart 7960. Both claim resolutions of 4,800-x-1,200dpi, but the Canon uses a much smaller droplet than the HP – 2 picolitres versus 5. (A picolitre is one trillionth (or one millionth of a millionth) of a litre). The i965 showed noticeably better detail than its i905D sibling, although they have identical resolution and droplet-size specifications.

The i905D tied with the Epson R300, which claims to have a higher resolution – 5,760-x-1,440dpi – but uses a slightly larger 3-picolitre droplet size. The Lexmark Z705 again fared poorly: it uses a much larger 7-picolitre droplet, and our test panel gave it the lowest marks of all the printers for detail reproduction – it completely lost details such as the serrations on a knife blade or the texture on a clove of garlic.

The Olympus got the second-lowest rating in terms of detail; images from dye-sublimation printers just aren't as sharp as those from inkjet printers.

The inkjet printers all offer multiple resolutions. The highest takes a lot longer to print than the second-highest one, so we asked the panel to compare prints from each inkjet at the highest and second-highest resolutions on glossy paper to see if they could see any difference. All told, we could detect no difference between the two resolutions (which is good news if you want high-quality prints quickly).

While we suspect that the vast majority of consumers will use these printers for colour photographs, we were intrigued by HP's claim that the Photosmart 7960 can also produce "stunning black-&-white" photos (though to do so you must swap out the black cartridge for the special photo-grey cartridge, which ships with the printer).

Our judges rated the black-&-white prints from the Photosmart 7960 as good, as they did with both Canon printers, but the difference largely boiled down to a choice between the HP's black-&-white with a reddish cast versus a much less appealing green (from the Lexmark) or cyan cast (from the Epson and Olympus). Although the HP was the best of the lot, we can't recommend any of these printers for serious black-&-white use.

The printers varied widely in the speed with which they produced prints. At the second-highest resolution, which normal printer owners will probably use most often, the undisputed speed champ was the Canon i960. (The Olympus P-440 has only a highest resolution.) The i965 produced an 8-x-10-inch print in a blistering 1 minute and 29 seconds. The Canon i905D took second place, closely followed by the Epson R300. The HP Photosmart 7960 was a little slower. The Lexmark took more than twice as long as any other printer, in all sizes at all resolutions.

The Olympus P-440's leisurely performance on 8-x-10 prints surprised us – speed is usually regarded as the main advantage of dye-sublimation technology. The Olympus printer did print 4-x-6 prints quite quickly, however (see the benchmark for speed comparisons).

Macworld's buying advice

The printer that stands out is the i965, thanks to its speed, colour fidelity and detail. Unfortunately the price lets it down. Although the UK model can print on CDs, the US version costs just $200, which doesn't readily translate to the £250 UK price. But the Epson Stylus Photo R300 gives real value, despite its mediocre greyscale output. The HP is better for this – it's just pricey, and slightly sluggish.

The Olympus P-440 is too pricey for its limited usefulness. And despite the Lexmark Z705's low price, it isn't worth the hassle to get this device to produce good colour.

Bruce Fraser

Computerless printing holds huge potential for the millions of consumers who wouldn't have a clue what to do with an image-editing application.

The Canon i905D, Epson, HP, and Olympus feature slots for printing from digital-storage media, and the quality of the prints surprised us – all were comparable to the results you'd get from a typical one-hour photo store, and those from the i905D were excellent, with strong but plausible saturation and natural skin tones. The Epson, the HP and both Canons support printing from compatible cameras, and the i905D and the HP sport colour LCD screens (Epson's R300M has a similar display). The Epson R300 supports printing from a USB CD or Zip drive and can print to CDs or DVDs.

Even if you would never dream of printing an unedited image straight from the camera, you may find it handy to be able to produce thumbnails of all your camera cards' images.

Mac productivity tools

Publisher: You Software
www.yousoftware.com

You Control

Pros: Can force-quit programs from menu bar; simple UI.
Cons: Allows nothing you can't already do in OS X; US-centric; expensive.
Min specs: G3; OS X 10.6.2.
Price: $49.95 online
Star Rating: ★★★★/7.0

You Synchronize

Pros: Easy to set up; impressive custom options.
Cons: Expensive.
Min specs: G3; OS X 10.6.2.
Price: $49.95 online
Star Rating: ★★★★/7.2

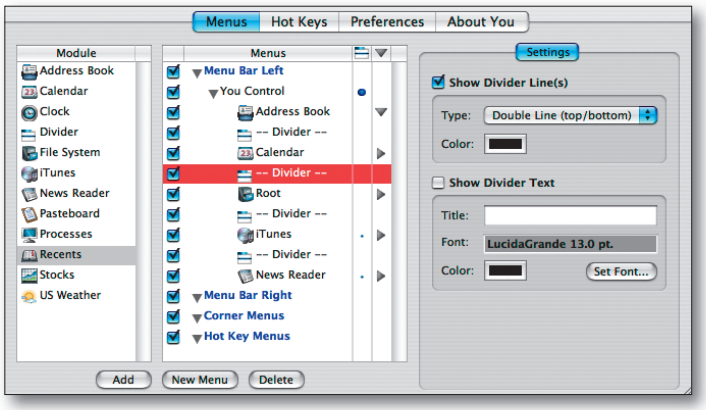
You Control (right) is aimed at people with the tampering gene. The program works in much the same way as OS 9's Now Menus, letting users add menus to the standard OS X tool bar.

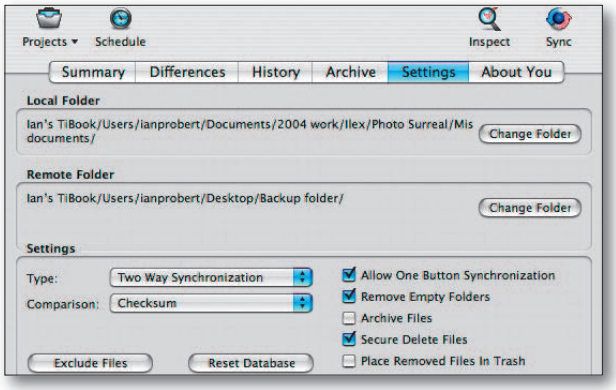
You Control gives the option of adding up to 12 extra pull-down menus to the OS X interface. These include: Address Book, which gives instant access to the contents of Address Book, from which you can choose to email a contact; Calendar, from which you can instantly view iCal events; iTunes, which lets you control the music player from the menu; and News Reader, which gives access to a range of news feeds including the BBC and Apple.

While there's little doubt that this program does exactly what is says on the box, it's questionable that UK users will have much need for a US Weather menu.

Although there can be no faulting the functionality or customization options of You Control, I'm always reluctant to shell out for features that the Mac OS already offers with marginally more mouse or finger work. Given OS X's notoriously inflexible tolerance of third-party utilities, I'm also disinclined to install all but the most essential. This, I believe, does not place me in the minority.

You Synchronize (below) is the latest addition to the file-synchronization market.





The program works by letting users synchronize a folder and its contents with another located elsewhere. This can be particularly useful if you use your computer for work. Simply select a Local Folder and its contents will backed up in a nominated Remote Folder. Change the contents of the Local Folder and the contents of the Remote Folder will change – and vice versa.

This feature is invaluable if you use more than one machine. If you have two networked computers, for example, you can easily synch the entire contents of both of their home directories. This means that any change you make on one machine – be it new music added to iTunes, new images added to iPhoto or any other document file – will be reflected on the other machine. In this way you can ensure that the contents of both are identical.

Installing You Synch is a matter of copying the program to your Applications folder. I did, however, encounter problems when I attempted to register my copy. Upon registration the program quit and subsequently refused to launch. It was only when I deleted You Synch's preference file that the problem went away.

Despite these teething troubles, You Synch performs well. Its compact interface is easy to understand and will have you up and running within minutes. Such simplicity belies its power: there are options for automatic synchronization of folders, as well as excluding valuable files from the synching process. You Synch is Unicode-savvy and also allows synchronization with Windows servers. If, like me, you can never quite trust automatic synching software, there's an option to archive files that are deleted for later retrieval.

Macworld's buying advice

Despite my own misgivings, regular users of Now Menus or its successor Action Menus will no doubt welcome You Control. If OS X has thus far starved you of the opportunity to exercise the tampering gene, it will provide all the tools you need to overload your menu bar with customized menus, both useful and useless.

You Synch is solid piece of software that compares favourably with other synchronization packages available for OS X. While offering nothing particularly ground breaking, it's ideal for home or office use. The only minor gripe is the cost: at more than half the price of Apple's iLife it begins to look a little expensive. If this is too much of an obstacle for you, there are cheaper options available.

Ian Probert

PowerBook protection

PowerSleevz; ScreenSavRz

Manufacturer: Radtech
www.radtech.com
Distributor: Raidius,
020 7233 2952
Pros: Snuggly soft; fits like a glove.
Cons: Too expensive.
Min specs: A laptop.
Price: ScreensavRz, £17.99; PowerSleevz, £23.99. Prices include VAT.
Star Rating: ★★★★/7.5

I'm new to PowerBooks. Now the proud owner of an aluminium PowerBook, I worry about wear and tear. Luckily Radtech has a range of products to keep my baby safe and scratch-free.

The PowerSleevz cover is a soft, suede-like envelope that slips over your PowerBook. The material is synthetic and slightly stretchy, which means it fits the PowerBook like a glove. When not holding the PowerBook it can double as a screen duster, and it also helps grip the PowerBook so you are less-likely to drop it.

If you don't have an expensive carry case, PowerSleevz can protect your machine loose in a regular bag. It doesn't offer much padding, but should repel scratches. If you want to keep your PowerBook looking brand new this will help a lot.

Older PowerBooks often suffer from screen scratches due to the keyboard touching the screen when the machine is closed. It's not yet clear if my 15-inch PowerBook suffers the same design flaw, but I don't want to find out. To this end, RadTech also makes ScreenSavRz, a soft cloth that sits on your keyboard while the machine is closed, keeping the pressure off the screen. It is a bit of a hassle to keep putting it on and taking it off. However, the alternative could mean a dinged-up screen, which will never get fixed – so it's worth the effort.

Macworld's buying advice

Both of these products will keep your machine looking new when others look like they've been in combat. However I'm irked that the product is available for a lower dollar price than we pay in pounds.

David Fanning

It's finally here. After years of waiting, Halo has made it to the Mac. Despite being released four years later than first expected, it still offers the most incredible gaming experience on the Mac. However, to get the most out of Halo, you may need a new computer.

The minimum requirements are an 800MHz G4 with 256MB RAM, 1.4GB of disk space and a 32MB AGP graphics card. That's a fairly hefty minimum spec, but it works pretty well with that. However if you are lucky enough to have a G5 – pretty much any G5 – then it will blow you away.

A couple of months ago we previewed Halo while it was still in beta. The game play is excellent, the storyline interesting and seemingly endless and the graphics are out of this world. But the most exciting part, the online play, wasn't ready. Now the game is finished, and you won't be disappointed.

If you're a veteran of the Marathon series of games that Bungie released in the 1990s, you recognise the occasional tip of the hat to it in Halo. From the occasional sounds of soldier screaming "They're everywhere!" to the familiar weapons like the rocket launcher. The story line in Marathon was good – Halo is similar but much more extensive. It really helps you get involved with the game when you know why you're blasting the aliens, collectively known as the Covenant.

The multiplayer part of the game will make Halo an addictive part of your gaming life – though it does descend into a bit of a rocket-fest if you aren't careful. It's only natural that putting big guns in the hands of players will result in mayhem, so there is one feature I would like to see added: cooperative games against the computer. Playing a real team tends to veer away from stealth and thoughtful blasting, but a computer-based Covenant enemy would offer a more realistic assault that might even involve planning and strategy. Or perhaps I'm just getting old and my reaction times aren't as fast as the younger players. Either way, the multiplayer mode is great.

Macworld's buying advice

If you have a G5 it would be a crime not to show off its power with this game. If you have a decent G4 you'll still get a playable, addictive game – it just won't be as pretty. It's hard to explain the vastness of this game – but you'll definitely get your money's worth. If you like alien-blasting mayhem, your life will be complete.

David Fanning

It's finally here!

Halo: Combat Evolved

Publisher: MacSoft
www.macsoftgames.com
Distributor: Softline, 01883 745 111
Pros: Complex; endless gameplay; amazing graphics.
Cons: You may need a new Mac; multiplayer a bit frantic.
Min specs: 800MHz G4; 256MB RAM; 1.4GB hard-disk space; 32MB AGP graphics card; Mac OS X 10.2.8.
Price: £39.99 including VAT.
Star Rating: ★★★★★/9.0

Ivor biggun

Halo offers human and alien vehicles. You can drive, hover and fly with complete freedom, and bigger vehicles can hold more people for extra firepower.

If you have an iSight or any other FireWire webcam, ToySight may be of interest. It forgoes keyboard or mouse control and uses the camera to allow gesture control.

When you start the application you're asked to move out of the camera's view. This allows ToySight to know what's you and what is background. Then, standing about four feet from the camera, you're set to control the app.

ToySight is a collection of nine games and a couple of visual toys. If you're after a shoot 'em up then you'll be disappointed. These games are generally simple and kid-friendly. Lets face it, how many adults are going to be leaping around in front of a camera to play a game, even in the privacy of their own home? ToySight is for the kids.

Most of the games use sliders to control something on the screen. You hold your hands up to operate the sliders, controlling anything from the flapping of wings in the Owl and the Pussycat game, to the trajectory of a skydiver in FreeFall.

Be warned – your arms will get tired, and you will look stupid, but I suspect kids will love it. Perhaps it's my prudish nature, but I can only imagine a group of adults playing this for any length of time they're well tanked up.

The toys are also ideal for parties because they employ the same motion sensing technology to make visuals appear on screen.

I'm sure hip clubs will employ it before long. Suffice to say, should you find yourself in an altered state due to imbibing the wrong kind of mushrooms, the party mode will supply endless amusement.

Macworld's buying advice.

There's no getting away from the fact that ToySight is a novelty, but it is fun. It isn't going to appeal to hardcore gamers (see Halo above), but kids will love it and grownups will have some goofy fun with it. It isn't the kind of game that will keep the kids quiet, but it might give them some exercise.

David Fanning

Arm-flailing fun

ToySight

Publisher: Strange Flavour
www.toysight.com
Distributor: Softline, 01883 745 111
Pros: Almost counts as exercise.
Cons: Not for the introvert.
Min specs: FireWire webcam.
Price: £29.99 including VAT.
Star Rating: ★★★★/7.7

Demo on the DVD

Trippy, man

Various effects are used, movement is trailed with stars, various ghosting effects, a fish-eye lens and a very freaky delayed-reaction posterization effect make for a fun clubby display. Add a projector and you have a fantastic interactive display.

Living the iLife

Steve Jobs unveiled iLife '04 at the Macworld Expo in January. All the iApps, except iTunes, have been updated, with GarageBand the new star.

By David Pogue

author of iLife '04: The Missing Manual, which will be released this spring by Pogue Press/O'Reilly. For more details see www.missingmanuals.com.

iTunes 4.2 is the digital jukebox software for Mac (and, if you can believe it, Windows) that "rips" songs from your music CDs onto your hard drive, organizes and plays your music collection, lets Americans buy songs from the iTunes Music Store, and syncs all your music with your iPod. (No new features debuted in the iLife '04 package, so you won't read much about iTunes here.)

iPhoto 4 is the program that sucks in your photos from a digital camera, helps you organize them, and then presents them to the world – as a slideshow, Desktop picture, screen-saver, email attachment, Web page, DVD, printout, or hardbound photo book.

[Question: What ever happened to iPhoto 3? Answer: there never was one. It just seemed too strange for Apple to build iLife '04 out of a mishmash of different version numbers, so the company jumped directly from iPhoto 2 to iPhoto 4. Bear that in mind the next time you're tempted to bid on an "unopened, shrinkwrapped copy of iPhoto 3" on eBay.]

iMovie 4 is the software that forever revolutionized the concept of home movies, turning them from six-hour tedium marathons to short, sweet, tightly edited highlights reels that friends actually ask to see.

iDVD 4 can transform iMovie productions and digital slideshows into Hollywood-style DVDs that play on everyday DVD players.

GarageBand is an all-new program that turns your Mac into a digital music-recording studio. For anyone with any musical talent or even musical interest, GarageBand is every bit as revolutionary as iMovie and iPhoto were when they debuted. All three tear down the technical barriers that stand between you and professional-calibre work.

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

iPhoto 4

Pros: Faster; now holds up to 25,000 images; album sharing; image editing from slide shows; batch changes and smart albums.
Cons: Printing and book-making features not active in Europe until sometime in March.
Minimum specs: G3 Processor; OS X 10.2.6 (10.2.8 is required to burn CDs or DVDs).
Star Rating: ★★★★/8.7

Even in version 1, iPhoto pounded a silver spike through the heart of what Steve Jobs calls the "chain of pain" – the hassle of getting your photos out of the camera and onto the computer. Despite the brilliance of the program, however, one criticism dogged it year after year: it was just too gosh-darned slow. By the time you filled it with 2,000 pictures or so, iPhoto had all the pep of a pet rock. Web sites and books described ugly workarounds, such as breaking up your Photo Library into smaller chunks.

iPhoto 4 ends the tyranny of sluggishness. Even on a Mac of average speed, keeping 15,000 or 25,000 photos in a single iPhoto library is no big deal. Switching between modes, changing slideshows, zooming out and back, opening the program to begin with – Apple has goosed the speed of just about everything. For digital-camera fans, that single improvement could justify the £39 price of the iLife '04 suite right there. But there's much more to the package – and much more to iPhoto 4.

The post-dump slideshow

What's the first thing you want to do after dumping fresh photos off the camera into iPhoto?

Look at them, of course; view them at full-size for the first time; rotate the pictures that you took with the camera turned 90 degrees; delete the stinkers. The obvious iPhoto tool for this purpose has always been the slideshow. Unfortunately, every time you spotted a photo that needed help (or needed trashing), you had to cancel the slideshow, make the change, and then start the show again.

In iPhoto 4, everything has changed. Immediately after importing your photos, click the Last Roll icon in the Source list at the left side of the screen, and then click the Play triangle underneath the Source list. Once the slideshow begins, wiggle your mouse to summon the new slideshow control bar shown in "Slide rules".

As you can see by the screenshot, this is the perfect opportunity to throw away lousy shots, fix the rotation, and linger on certain photos for more study – all without interrupting the slideshow. You can even apply a rating by clicking the appropriate star in the band of five, exactly as in iTunes. Later, you can exploit your ratings in several ways:

- Choose View: My Rating to see the actual stars, in grey, stamped beneath the thumbnails of the photos you've rated.
- Choose View: Arrange: By Rating to sort all the visible pictures so that the best ones appear at the top.
- Create a smart album, described next.

More Slideshow goodies

The control bar isn't the only newsworthy slideshow enhancement of iPhoto 4. If you click the Slideshow button at the bottom of the window, you'll find a few other treats in the resulting dialog box.

For example, the new Transition pop-up menu lets you specify what kind of crossfade you want between the slides in your show.

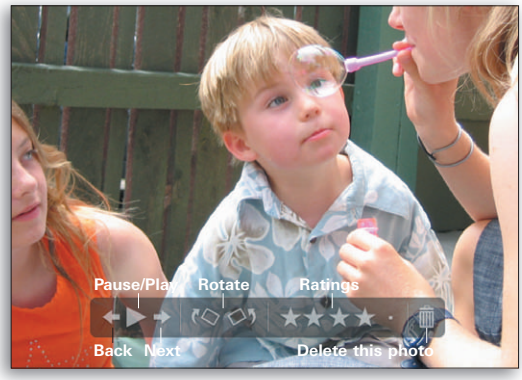
You can now choose several sophisticated transitions that Apple introduced in its Keynote presentation program, such as the immortal Cube effect.

Scale photos to fill the screen means that vertically oriented photos will no longer have black bars on either side during the slideshow. Instead, iPhoto will blow up each picture so that it fills the entire screen, edge to edge. The downside, of course, is that some of the picture will get chopped off – which may include your skull.

The Display checkboxes superimpose titles, star ratings, or slideshow controls onto the bottom of the screen during the show.

If you click the Music tab of the dialog box and study it hard, you'll find one of the most eagerly awaited new features of iPhoto: the ability to specify an entire playlist of songs to accompany the show. No longer must you listen to the same two-minute pop song looping over and over again throughout your eight-minute slideshow.

The trick is to choose the playlist name you want from the Source pop-up menu (which reflects the playlists that you've built in iTunes). If you click Play or Save Settings now, you'll get the entire playlist as the background music for this album's slideshow. If you click one of the songs in a playlist, however, you'll hear only that individual song.



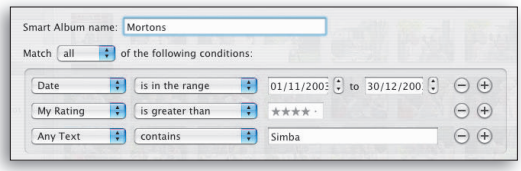
Slide rules
As the slideshow progresses, you can pause the show, go backward, rotate a photo, delete a bad shot, or apply your star rating to a picture, all courtesy of this new control bar. If you'd rather have it visible during all slideshows of this album or roll, click the Slideshow button at the bottom of the screen and turn on Display Slideshow Controls.

Smart albums

Albums are the little folder-like icons in the Source list at the left side of the iPhoto window. These subsets of photos are the primary organizational tool in iPhoto. You create one by clicking the + button beneath the list, and add photos by dragging in their thumbnails.

In iPhoto 4, though, you can let the software create albums for you, thanks to smart albums. These are self-updating folders that display pictures that match certain criteria that you set up – all pictures that you took in 2003, for example, or all photos that you've rated four stars or higher. If you've ever used smart playlists in iTunes, you'll recognize the idea.

To create a smart album, choose File: New Smart Album (⌘-Option-N), or Option-click the + button below the album list. Either way, the Smart Album sheet slides down from the top of the window (see "Smarty snaps").


Smart Album name: Mortons
Match all of the following conditions:
Date is in the range 01/11/2003 to 30/12/2003
My Rating is greater than ★★★★
Any Text contains Simba

Smarty snaps
The Smart Album dialog box is really just a powerful search command, because iPhoto is really just a powerful database. You can set up certain criteria, like this hunt for photos taken during a certain time period. iPhoto will keep this album updated whenever your collection changes (as you change your ratings, as you take new photos, and so on).

The controls here are designed to set up a search of your photo library. "Smarty snaps" illustrates how you'd find pictures that you took in the last two months of 2003 – but only those that have four- or five-star ratings and mention your dog "Simba" in the title or comments. You can also limit a smart album's reach by looking for pictures by specified album, by text in their comments or keywords, by dates or file names, by 'film roll' (import batch), or by title. (Click the + button to add a new criterion row to specify, for example, photos taken within a certain date range and bearing a certain star rating.)

When you click OK, your smart album is ready to show off. When you click its name in the Source list (it has a little gear icon), the main window shows you the thumbnails of the photos that match your criteria. As time goes on and you add new photos to your collection, this collection of thumbnails updates itself accordingly.

Tip: To change the parameters for a smart album, click its icon in the list and then choose Photos: Show Info (⌘-I). The Smart Album sheet reappears.

Recent rolls

In previous iPhoto versions, the top of the Source list included one icon called Photo Library (every picture in your

continues page 58

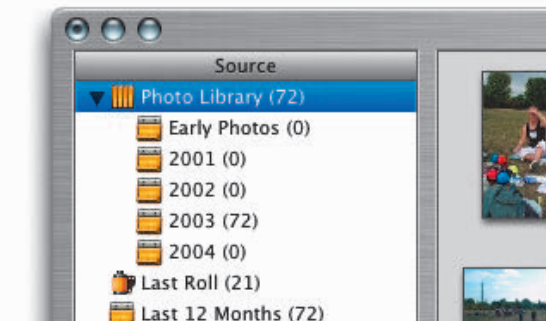
collection), and another called Last Import (the most recently imported batch).

That structure wasn't always the most convenient, however. If you dumped your pictures onto the Mac at the end of each day of a three-day Disney World trip, for example, the Last Import feature wasn't much help. What you really wanted to see was the last three digital dumps in one group.

iPhoto 4 makes all of this much easier. At the top of your Source list, you'll find these new or enhanced icons:

Photo Library If you click Photo Library, you see every single photo in your collection, just as before. But if you click to expand the flippy triangle, you'll see that iPhoto can also break your photos down by year (see left).

Tip: You can also drag a photo onto the Film Roll header of any other film roll to move it there.



Year by year
In iPhoto: Preferences, you can specify whether or not you want these organizational icons to appear, and how many months or rolls they represent.

Last 2 Rolls In iPhoto terminology, a film roll is one batch of imported photos from your camera (not to be confused with a film role, which is one batch of sudden fame in Hollywood). This icon replaces the old Last Import icon – and it's a lot better, because you can specify how many recent import jobs appear in this collective group. You specify how many film rolls you want listed here by choosing iPhoto: Preferences. On the General tab, change the number where it says "Show last __ rolls album". In the unlikely event that you don't find this icon useful, you can also hide it entirely by turning off the corresponding checkbox.

Last 12 Months This new icon reveals your most recent photos, clustered by time rather than by import job. You can specify how many months' photos appear in this heap – anywhere from one month to a year and a half – on the General tab of iPhoto Preferences.

Batch processing

iPhoto 4 now offers a batch processing feature. To use it, choose Photos: Batch Change, or Control-click some selected photos and choose Batch Change from the contextual menu.

Now, iPhoto 4 still can't edit a batch of photos. You can't, for example, scale them all down to 640-x-480 pixels, or apply the Enhance filter to all of them at once.

Instead, the Batch Change command manipulates text labels for a selected group of photos. When the Batch Change sheet drops down from the top of the window, you can use its popup menus to change all the selected photos' names (to Ski Trip 1, Ski Trip 2, and so on); to change the dates they were taken, in effect rewriting history; and to change their Comments boxes to a certain matching blurb.

Photo-sharing on the network

One of the coolest features of iTunes is the way you can publish certain playlists on your home or office network, so that other people in the same building can listen to your tunes. Why couldn't iPhoto do the same thing with pictures?

Now it can. On your Mac, choose iPhoto: Preferences and click Sharing. Turn on Share My Photos (see "Share alike"). Specify a password, if you like, and then close the window.

At this point, other people on your network will see your albums show up in their Source lists, above the list of their own albums. (Or at least they will if they have Look for Shared Photos turned on in their iPhoto preferences, as shown in the screen above at top.)

Share alike
If you turn on "Share entire library," you make all of your pictures available to others on the network. Alternatively, click "Share selected albums" and turn on the individual albums you want to make public.

Tip: While you're in Preferences, don't miss the 'Show photo count for albums' option. As shown left, it places a number in parentheses after each album name, representing how many pictures are inside.

As you may know, when you share iTunes music over a network, other people can only listen to your songs – they can't actually have them. (The large, well-built lawyers of the American record companies have made sure of that.)

But iPhoto is another story. Nobody is going to issue you a summons for freely distributing your own photos. So once you've jacked into somebody else's iPhoto pictures via the network, feel free to drag them into your own iPhoto albums, thereby copying them onto your own Mac. Now you can edit them, print them, and otherwise treat them like your very own photos.

Miscellaneous goodies

As you explore iPhoto, you'll find all kinds of other nips and tucks that make the program even more pleasant:

- When you publish photos to a .Mac Web page, you have more canned layout designs to choose from – namely, the 17 of them that are available to .Mac members who create Web pages online. There's also a new photo book layout called Collage that lets you specify captions for some pages but not for others. (Ordering these gorgeous photo books is no longer limited to US photo-fans, either.)
- In Edit mode, the Black and White button is now joined by a Sepia button, which makes the selected photo look old and brownish, for that old-time daguerreotype look.
- The new File: New Film Roll from Selection command creates a new film roll from a batch of highlighted photos, thus splitting them from their original roll. (That's a first for iPhoto. In the old days, the only way to create a new film roll was to import a new batch of photos from a camera or the Finder.)
- Similarly, the File: New Album from Selection command saves you a few steps when you want to file away a particular clump of pictures into a new album.

These latest versions of iPhoto, iMovie and iDVD cannot be downloaded for free from Apple's Web site, but must be purchased as a part of the iLife package (£39 including VAT). They are still bundled for free with all new Macs.

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

iMovie 4

Pros: Non destructive edge-dragging; audio improvements; bookmarks; improved file sharing; faster.
Cons: Poor documentation.
Min specs: G3 Processor; Mac OS X 10.2.6
Star Rating: ★★★★/8.7

At first glance, iMovie 4 looks identical to iMovie 3. But under the hood, dozens of annoyances have been eliminated and dozens of polished touches have been added. This is the best possible kind of upgrade: one that's filled with nearly invisible changes designed expressly for people who actually use it every day, rather than flashy big-ticket items.

Editing enhancements

Editing is really what iMovie is all about, so any assistance is welcome. Here are some things that will make your iMovie life easier.

Nondestructive edge-dragging Nobody starts and stops recording precisely when the action begins and ends; life is just too unpredictable. So the first thing most people do in iMovie is to trim the shots – chop the boring parts off the beginning and ending of each clip before dragging them onto the timeline.

In iMovie 4, there's a much easier way. Instead of chopping off the ends of your clips, you can just hide the ends of your clips, as shown below. (This kind of nondestructive edge-dragging also works with audio clips.)

Select nonadjacent clips

For the first time, you can select several clips that aren't next to each other. Switch into Clip Viewer mode (choose View: Switch to Clip Viewer, if necessary). Now you can use the same techniques you'd use to select nonadjacent icons in a Finder list view: Click the first clip, then ⌘-click each additional clip. You can also ⌘-click a selected clip to deselect it.

What can you do once you've selected multiple discontinuous clips? Let us count the tricks:

- Delete them all by pressing the Delete key.
- Move them all back to the Clips pane by dragging any one of them. (The remaining clips slide to close the gaps.)
- Apply the same transition, special effect, or Ken Burns photo setting to all of them using the Apply button (on the Trans, Effects, and Photo panes) – or update them all using the Update button.
- Consolidate them. That is, you can extract the selected clips from their current positions in the movie (Edit: Cut). Click a different clip in the movie to pinpoint a landing site, and then choose Edit: Paste. The clips that you cut, which were once scattered, now appear adjacent to each other and in sequence.

Tip: Speaking of the Ken Burns zoom-and-pan photo effect: If you Option-drag a set of photos from the Photos pane into the timeline, iMovie applies the Ken Burns effect to all of them, alternating zoom direction on each one.

Bookmark your place

Navigating complex movies is a lot easier in iMovie 4, thanks to the new Bookmarks feature.

It works like this: Position the Playhead at an important spot in the movie, and then choose Bookmarks: Add Bookmark (⌘-B). iMovie responds by placing a tiny green diamond at that spot on the ruler (you can see a couple of them below). Bookmarks are visible only in Timeline Viewer mode.

You'll see the real value of these markers once you've added a few of them to your movie. Now you can use the Previous Bookmark and Bookmark commands (⌘-[and ⌘-], respectively) to leap instantly from one marker to the next.

Note: You can remove an individual bookmark by clicking it and then choosing Bookmarks: Delete Bookmark, or all of them at once by choosing Bookmarks: Delete All Bookmarks.

Tip: If you ⌘-drag a clip in the Timeline Viewer, you can move it right on top of an adjacent clip, in effect trimming the part that the dragged clip is now covering up.

Colour clips

In previous versions of iMovie, you could create a few seconds of pristine blackness by dragging any video clip to the right in the Timeline Viewer. In the resulting gap, iMovie introduced a solid black clip.

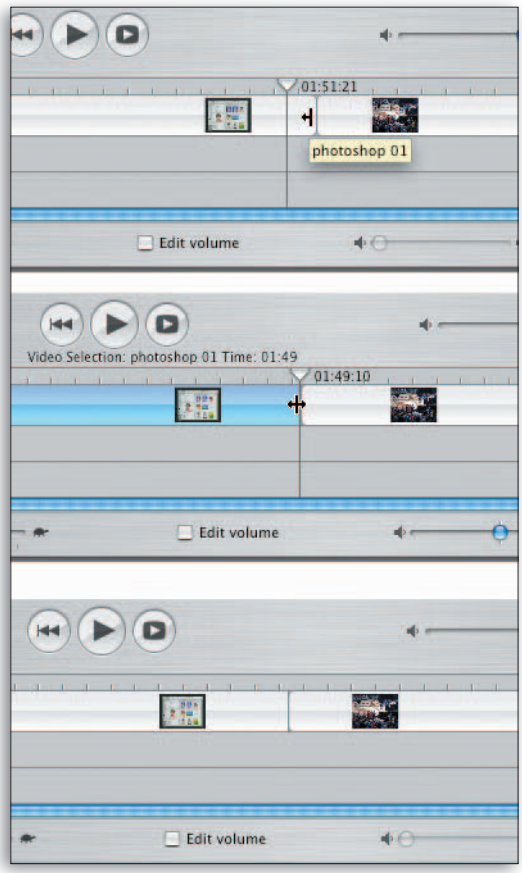
In the new version, dragging a clip to the right still introduces blackness in the gap during playback, although you don't actually see a black bar in the Timeline Viewer (you just see a gap).

But if you deselect all clips, position the Playhead anywhere inside of that gap, and then choose Advanced: Create Colour Clip, iMovie creates a visible clip that looks like a black slide.

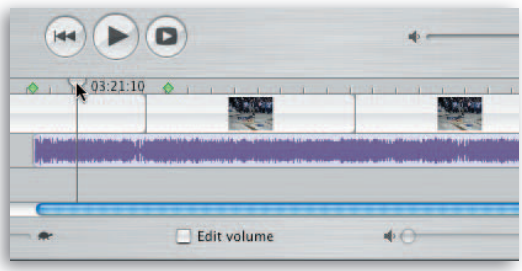
Here comes the fun part. If you double-click this new clip, the Clip Info dialog box appears. It lets you name the clip and, more important, click the Colour swatch to bring up the standard Mac OS X colour picker dialog box.

In this way, you can create a few seconds of any colour – not just black – to serve as a transition, a background for titles and credits, or just a soothing moment of pure, perfect fuchsia.

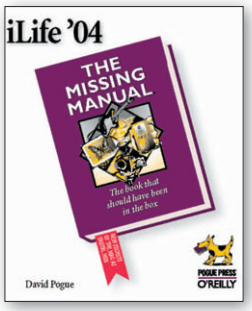
continues page 60



Drag queen
Top and middle: You can drag the edge of a clip to shorten it – nondestructively. Later, in a panic of indecision, you can drag the edge back to the right to restore the hidden footage. Bottom: You can tell when a clip is stretched to its full length, because its end has a distinctive roundness.



Surfing the waves
The only downside to turning on waveforms is that doing so could slow down scrolling in very complex projects.



iLife '04: The Missing Manual (Pogue Press/O'Reilly) by Macworld contributing editor and best-selling author David Pogue will be available this spring, alongside individual books on iPhoto 4, iMovie 4 and iDVD, and GarageBand.

When you examine the new iMovie Preferences dialog box, you're in for a few pleasant surprises. One of them is an option called Show Audio Track Waveforms. When you turn it on, you see the actual sound waves, as shown in on the previous page. Seeing the waveforms makes precise video editing much easier – eliminating a pop or an expletive, for example – or to sync audio with video.

While in Preferences, you might also want to turn on Enable Timeline Snapping. Now, when you drag the Playhead along the ruler in the Timeline Viewer, you see, hear, and feel it snap to the beginnings and ends of the soundwave chunks in the soundtracks below, also as shown in "Surfing the waves". (You turn off the little clicking sound in this same dialog box.)

Like the snapping? Then you'll love these tips:

- When Timeline snapping is turned on, the Playhead also snaps to bookmarks, chapter markers, and the beginning and ends of clips.
- Snapping is extremely useful when you're seeking a good place to split an audio clip – like during a bit of silence.
- This feature can also be useful when you want to align a video clip with a certain moment in the music. Drag the Playhead to the appropriate spot in the soundtrack. Release the mouse. Now, when you drag a video clip, a ghost version of the Playhead (with a snap line extending down from it) remains where you left it, so that you have an easy target as you position the video clip.
- If you Shift-drag the Playhead, you override whatever the Playhead-snapping setting in Preferences is. If snapping is off, Shift-drag to turn it on just for this moment.

The final audio-precision feature is audio scrubbing. If you Option-drag the Playhead, you hear the actual audio, played forward or backward, at whatever speed you're dragging. This is another excellent tool for hunting down some annoying audio artifact or lining up a particular 'hit' in the audio with a specific action in the video.

Tip: This feature works best if you zoom in first, using the Zoom slider at the lower-left of the screen. It also helps to drag very slowly, to avoid making your soundtrack sound like "Alvin and the Chipmunks Do Helium."

Previous versions of iMovie didn't even have a View menu, which is sort of strange for such a visually oriented program.

In any case, you'll welcome these new commands:

- **Switch to [Clip or Timeline] Viewer.** This command lets you toggle the bottom part of the iMovie screen between the two views.

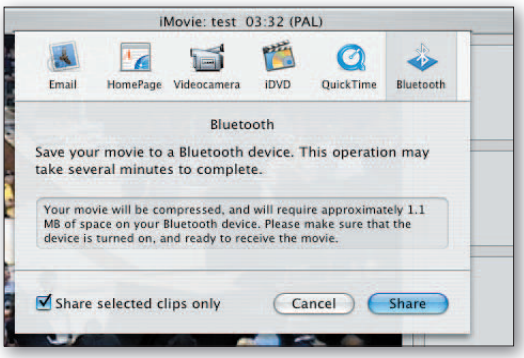
Actually, it isn't the menu command that's so great: it's the keyboard shortcut, ⌘-E. No matter which view you're in, ⌘-E switches to the other one.

- **Scroll to Playhead**. If you've managed to lose the Playhead while scrolling, this command jumps to its position in the Timeline, pulling the Playhead into view.
- **Scroll to Selection.** This command scrolls the Timeline to reveal whatever clips are highlighted at the moment.
- **Zoom to Selection.** Start by highlighting a clip or two that you want to work with in the Timeline Viewer. Then use this command. iMovie dutifully zooms into the Timeline so that your selection fills the entire width of the screen, making it much easier to fine-tune minute video moments or audio problems.

Miscellaneous improvements

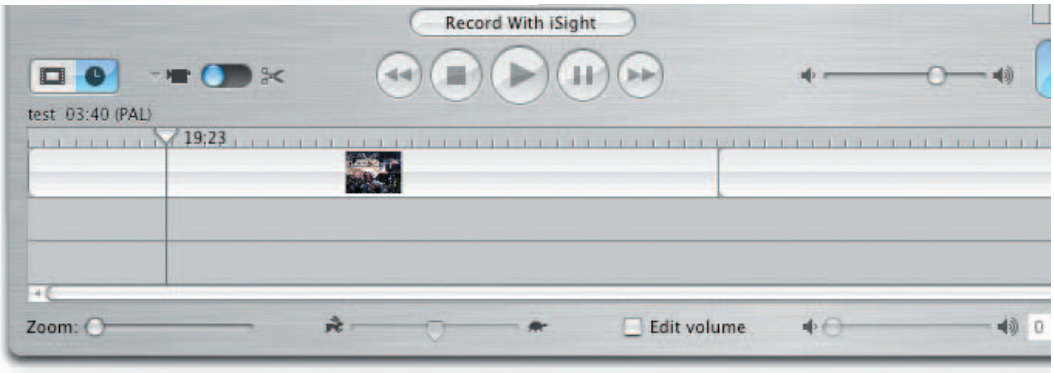
Tiny touchups are everywhere in iMovie 4. For example:

- The old File: Export menu command is now called File: Share, and it offers a few new options (see "Blue Movie"). Among them: Share Selected Clips Only, which lets you export only a segment of your movie. (It's available only if you had selected several consecutive clips before choosing the Share command.)
- You can choose some new title effects, including one called Far, Far Away. (Can you guess what it looks like, Star Wars fans?) Also, the title styles are now grouped by flippy triangles to make the list easier to navigate.
- iMovie 4 processes just about everything faster: effects, transitions, Ken Burns-style zooming and panning, and so on.
- Attention, efficiency freaks! Control-clicking thrives in iMovie 4. You get useful contextual menus when you Ctrl-click all kinds of things in iMovie 4: clips (video, audio, title, transition), the Playhead, the Scrubber bar (under the Monitor window), empty space in the Timeline Viewer, and so on.
- You can use an Apple iSight video camera as though it's a camcorder. As shown below, a new pop-up menu appears that lets you choose which video source you want to use for capturing new video.


iMovie: test 03:32 (PAL)
Email
HomePage
Videocamera
iDVD
QuickTime
Bluetooth
Bluetooth
Save your movie to a Bluetooth device. This operation may take several minutes to complete.
Your movie will be compressed, and will require approximately 1.1 MB of space on your Bluetooth device. Please make sure that the device is turned on, and ready to receive the movie.
Share selected clips only
Cancel
Share

Blue movie
You can now post a finished iMovie directly to your .Mac HomePage Web page – or even send a highly compressed version to a Bluetooth-equipped (and "3GP-compatible") mobile phone, Palm organizer, Mac, or PC!

iDVD 4 on page 62



What a source
Use the camcorder icon as a pop-up menu to choose the iSight (or another camera) as the video source.

iDVD 4

Pros: New themes; more buttons per page; 2 hour DVDs; DVD map; Autoplay feature; DVDs can be put together without requiring a DVD burner to be present.
Cons: Requires DVD drive for installation; Apple SuperDrive required to burn DVDs.
Minimum specs: iDVD requires a 733MHz PowerPC G4 or faster.
Star Rating: ★★★★★/9.0

If your Mac has a built-in SuperDrive (a drive that can play and record CDs and DVDs), then you probably already know about iDVD. It lets you turn iMovie movies and iPhoto slideshows into Hollywood-style DVDs that play on most standard DVD players. iDVD 4 is loaded with enhancements that help you make your DVD look even more like a commercial Hollywood DVD.

But before you even get that far, you'll discover one welcome change: iDVD now runs on Macs that don't have SuperDrives. Of course, you still need a SuperDrive to burn a DVD – but now you can do the design work on another machine. That's a great feature in, for example, school computer labs that have 12 Macs, but only two that can burn DVDs. (To transfer a DVD project to a different Mac, use the File: Archive Project command. Then copy the resulting "bundle file" to the Mac with a SuperDrive.)

Tip: If you tinker with the graphics tools in a program like Photoshop or AppleWorks, you can come up with a decent replica of the standard FBI warning that appears as the Autoplay of a commercial DVD. You can precisely duplicate the wording and typographical look, or take the opportunity to do a hilarious spoof of the usual warning.

New themes

iDVD 4 comes with 20 new themes (ready-to-use menu screen designs complete with attractive backgrounds and coordinating type, music, and graphics). To see them, click the Customize button at the bottom of the main window; the Customize drawer slides open at the side. Click the Themes button at the top to see them all. Some themes appear twice: Wedding Theme Bronze One and Two, for example. That's a harbinger of another iDVD new feature: predesigned submenu screens, like the Scene Selection screens you'd find on a commercial DVD. The Two designs are intended for these second-level screens of buttons.

Tip: Actually, you have 44 themes available in all. Use the pop-up menu at the top of the panel to see the 24 themes from the previous version of iDVD.

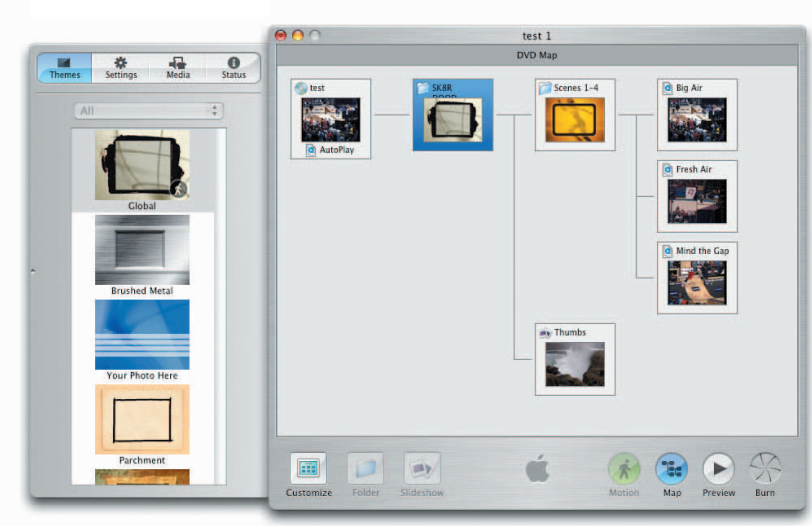
Fewer limits

Overall, the most important change in iDVD is the removal of limits that were present in previous versions. You can put 12 buttons on a menu page, up from six. You can now resize and move them freely. You can play 15 minutes of tunes as background music on a menu screen, not just 30 seconds. You can create up to 99 chapter markers per movie – the maximum possible in the DVD format – up from 36.

And you can now create text boxes on your menu screens and fill them with instructions, introductions, a description of the project, and so on. (To do this, choose Project: Add Text. Double-click the placeholder text and type away. Use the Settings panel of the Customize drawer to specify the font, colour, and size of the text.)

Map making

As you work on your DVD menu structure, behind the scenes, iDVD builds this handy map. You can't add to it, or drag or delete any elements you see here, but you can double-click one of the icons to open the corresponding menu, movie, or slideshow. You can also click one and then click the Preview button to try out that element on your "virtual DVD player."



The DVD map

In previous versions of iDVD, the main menu (the screen that appears when you first insert the DVD) generally contained at least two buttons: Play Movie and Scene Selection. If you clicked Scene Selection with the remote control, a submenu screen appeared, listing up to six buttons, each capable of playing a slideshow or little movie. But if you had more than six movies or slideshows, you had to click onto yet another submenu screen that had another six buttons. And if that still wasn't enough room for your buttons, you had to create another submenu. And... well, pretty soon, you felt like Hansel and Gretel with not enough bread crumbs.

But now, as your menu and button layouts grow more complex, you can use the new Map screen to help you keep track of your menu structure (see below left).

To view the map, just click the Map button at the bottom of the main iDVD window. The element you were working on appears with coloured highlighting. To scroll, just drag in any blank space. (Click the Map button again to return to the menu screen you were working on.)

But the map is more than just a pretty navigational aid. It also makes possible several additional iDVD 4 features.

Autoplay

Until now, you could make your homemade iDVD discs behave like commercial Hollywood DVDs in almost every respect – except one. You couldn't designate a video clip to play automatically when the disc is inserted, before the menu screen appears. You know – a bright red FBI warning, previews of coming attractions, or maybe just a quick snippet of the movie on the DVD.

iDVD 4 makes creating this kind of "pre-movie" extremely easy. In Map view, the upper-left icon is technically called the Project icon, but you can think of it as the Autoplay icon. Whatever you drag onto this tile will play automatically when the DVD is inserted, before your viewers even touch their remote controls.

These are the kinds of things you can put there:

- **A video clip.** In the Customize drawer, click the Media button at the top, and then choose Movies from the pop-up menu. iDVD displays all the movies in your Home: Movies folder; drag the one you want directly onto the Project tile to install it there.
- **A still image.** In the Customize drawer, click the Media button, but this time choose Photos from the pop-up menu. iDVD shows your complete iPhoto collection, including all of your albums. To use one of these images as a startup screen for your DVD project, just drag it onto the Project tile. (You can add audio to it, too, just as you'd add audio to a slideshow – by dragging in an audio file from the Audio section of the Media pane.)
- A slideshow. Once you've got the Photos list open in the Customize drawer as described above, you can also drag an entire iPhoto album onto the project icon. Alternatively, you can click and ⌘-click just the photos you want in the Customize panel, and then drag them en masse onto the project icon. In fact, you can even drag a group or folder of photos right out of the Finder and onto this icon.

To control how long your still image remains on the screen, or how quickly your Autoplay slideshow plays, double-click your Project tile. You arrive at a screen where you can adjust the timing, transition, and even the audio that plays behind the picture(s).

If you decide to replace your Autoplay material, just drag new stuff right onto it. Or, to eliminate the Autoplay segment, drag it right off the Project tile. It disappears in a little puff of Mac OS X cartoon smoke.

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Menu transitions

Speaking of crossfades and transitions: iDVD can put them between menus, too. Now, when your audience clicks a button on the main menu screen, the screen doesn't just jump cut to the selected move or slideshow; it crossfades, wipes, rotates on the face of a cube, or whatever.

To specify which transition you'd like, open the Customize drawer, click the Settings button at the top, and then use the Transition pop-up menu to specify the effect you want. (Your choice here affects all transitions into and out of menu screens.)

Looping

If you highlight the button for a movie, slideshow, or Autoplay tile – either in Map view or on a menu screen – and then choose Advanced: Loop Movie (or Loop Slide Show), you unleash another raft of possibilities. You can make a DVD that endlessly repeats the highlighted material (a slideshow or movie) and, in fact, never gets back to the menu screen.

That would be a great way to create a DVD containing a self-running slideshow that plays on a TV at a party or wedding reception. You could also use it to create a self-looping kiosk display at a trade show.

In any case, the DVD will loop endlessly – or at least until it occurs to someone to press the Menu or Title button on the remote, which displays your main menu at last. (The Menu button redisplays the previous menu screen; the Title button causes a return to the main menu.)

Slideshows

The DVD has always been a fantastic delivery mechanism for slideshows. The pictures look great on a TV, music plays, and your grateful viewers can control the pace using the remote control (if you give them that freedom).

iDVD 4 makes setting up slideshows even easier. You begin as you always have – by opening the Customize drawer, clicking the Media button, choosing Photos from the pop-up menu, and dragging an album (or a selected group of pictures) onto a menu screen. (You can also drag a folder full of pictures right out of the Finder and onto the menu screen.)

As before, iDVD creates a button that links to those pictures. But in iDVD 4, you can double-click this button to open a new Slide Show editor.

Here, you can rearrange slides by dragging them (the other slides scoot aside to make room), delete selected slides with the Delete key, or add new photos from the Customize drawer.

Then, of course, there are the controls at the bottom of the window. As in previous iDVD versions, they let you specify how long the slides remain on the screen (or choose Manual to let the viewers advance the slides). But a few new goodies are here:

Transition Now you can specify any of several graceful transition effects – Dissolve, Cube, and so on – to govern how one slide morphs into the next.

Note: The transition you specify here affects all slides in the show.

Looping If you turn on the "Loop slideshow" checkbox, the slideshow repeats endlessly.

Longer audio tracks The music that accompanies your slideshow must no longer end pathetically three minutes into the presentation.

Open the Media panel of the Customize drawer. From the pop-up menu, choose Audio. Now you see your entire list of iTunes music – in fact, you even see your playlists here. To avoid the music-ending-too-soon syndrome, drag an entire playlist into the little Audio well beneath the slide display. Your DVD will play one song after another according to the playlist.

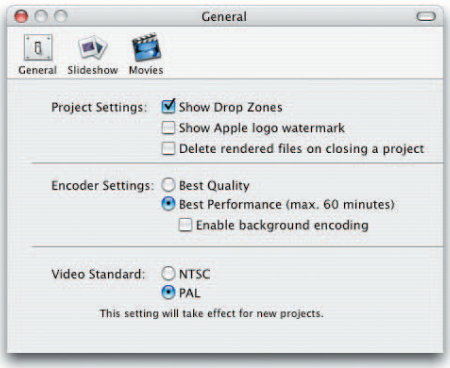
Best Quality/Performance: how it works

When a DVD-burning program goes to work, it faces an important decision. Given that a blank DVD contains a limited amount of space (4.7GB or so), how much picture-quality data can it afford to devote to each frame of video?

The Best Performance option in iDVD 4 makes that decision like this: "I'll allot a fixed, predetermined amount of data to each frame of video – enough to make it look great – no matter how many minutes of video my human master has included. A lot of the DVD might wind up being empty – if, for example, the project contains less than an hour of video. But at least the burning process will go quickly, and the video will look really great."

The Best Quality option takes a different approach. It says: "I'm going to use every micron of space on this blank DVD. I'm going to analyze the amount of video my human has included, and divide it into the amount of space available on the DVD. The amount of information used to describe an individual frame of video will vary from project to project, and it will take me a lot longer to burn the DVD because I'm going to have to do so much analysis. But at least my human will get two hours of great-looking video per disc."

Incidentally, if you'd like some insight into how iDVD is thinking of the project you're working on at the moment, open the Customize drawer and click the Status button. This new panel shows you how close you are to filling up the DVD with your movies, menus, and other elements.



Preferential treatment
iDVD 4 offers two ways to compress the video on your masterpiece.

Two hours of video

For some people, this final grace note might be the most important new feature in iDVD 4. You no longer must make the Hobson's choice between 60 minutes of video at best quality and 90 minutes at lower quality. Apple has thoughtfully raided its own professional DVD creation software and added one of its best features to iDVD: now any DVD you burn can contain two hours of footage at the best possible quality.

To see the on/off switch for this feature, choose iDVD: Preferences. On the General panel, you'll see two options under Encoding Settings. Both produce superior video quality to what you got from iDVD 3:

Best Quality This option gives you two hours of video. From 60 to 120 minutes, the quality gradually drops as iDVD tries to cram more and more video information onto a finite disc – but even at two hours, the picture looks better than 90-minute mode did in iDVD 3. And if you have only 60 minutes of video, this option produces much better video quality than the Best Performance setting.

This option takes a lot longer to burn your DVD, because the program performs quite a bit of analysis before burning.

Best Performance Video will look fantastic, and your Mac will burn the disc relatively quickly – but the DVD you burn this way can contain a maximum of one hour of video.

GarageBand on page 64

Tip: It's possible to create a DVD that never even gets to the menu screen – a DVD consisting only of Autoplay material. You could design a project that way for the benefit of, for example, technophobic DVD novices whose pupils dilate just contemplating using a remote control. They can just insert your Autoplay-only DVD and sit back on the couch as the movie plays automatically.

Tip: If you'd like some insight into how iDVD is thinking of the project you're working on at the moment, open the Customize drawer and click the Status button. This new panel shows you how close you are to filling up the DVD with your movies, menus, and other elements.

GarageBand

Pros: Easy for musicians and non-musicians; professional quality loops, samples and virtual instruments.
Cons: Can be flaky on low spec machines; poor documentation; requires DVD drive for installation.
Minimum specs: 600MHz G3 or faster required; G4 or G5 required for GarageBand software instruments; 256MB RAM; Mac OS X 10.2.8
Star Rating: ★★★★/8.9

iTunes is a music program, but its function is to organize and manipulate music created by other people. With GarageBand – some of the underlying technology of which Apple bought in 2002 when it acquired a company called Emagic – Apple enters new territory. It has created a program that lets you create music of your own.

If you're already a musician, you'll probably flip over GarageBand; it combines the CD-quality samples of Apple's Soundtrack software with the hard-disk recording features of Digital Performer and the canned rhythm tracks of Band in a Box. But what's really mind-boggling is the way this program can turn the inspiration of musical novices into commercial-sounding demos. Imagine how many thousands of singers and instrumentalists, though blessed with enormous native talent, remain undiscovered because they lack recording studios and backup bands. For them, GarageBand may open a lot of doors – or just offer a lot of fun.

Tip: Apple intends to sell an expansion pack for GarageBand that includes even more instruments and loops.

Tip: The Space bar also works to start and stop playback, by the way. Don't forget to drag the Playhead into position before you tap it, so that you don't have to start from the beginning each time.

The concept

GarageBand lets you construct professional digital recordings using three kinds of raw material:

Pre-recorded loops The program comes with thousands of professionally recorded musical snippets – drums, guitar, bass, and dozens of other instruments. Even if you don't know a semiquaver from a semicolon, you can drag these musical snippets like building blocks, layering one track upon another until you have yourself a composition.

Professional samples If you have a USB keyboard – that is, a USB musical keyboard – or a MIDI synthesizer-type keyboard, you can use GarageBand's built-in sequencer as a digital tape recorder. As you play the plastic keys of your USB instrument, your Mac speakers emit the rich sound of a grand piano (it's a Yamaha C7, for those scoring at home), an orchestra full of strings, the brassy sting of rockhall trumpets, or any of hundreds of other sounds of your choosing. You can lay down one such track after another – the drum beat, followed by a bass line, then some piano, and so on – until you've got a rocking little band right in your Mac.

Digital recording Once you've built up an instrumental accompaniment, using either the prerecorded loops or by laying down some tracks with a keyboard, you can add the icing on the cake: live recordings. Most people sing or play into a microphone, using GarageBand as a multitrack tape deck. But you can also plug in a guitar, synthesizer, or any other sound source – and record it directly to your hard drive.

The idea is that you can use GarageBand's tools – prerecorded loops, sampled sounds, live recordings – in any way you see fit. Then you can apply professional-sounding effects like reverb or chorusing, and then export the finished product to iTunes, where you can download your work to your iPod, export it as an MP3, or burn it onto CDs. Forget the Recording Industry of America; GarageBand turns you into the Recording Industry of Your House.

Cold ampin'
GarageBand looks like an old-time guitar amp crossed with the brushed-metal interface of Mac OS X.

Module 1: prerecorded loops

Here's the part of GarageBand that you can use even if you have no musical training – or musical equipment – whatsoever.

Once you've opened up GarageBand, choose File: New. In the New Project dialog box, you can set the name, tempo (speed), time signature, and key for the piece you're about to create (you can change any of these parameters later). Type in name for this song and then click Create.

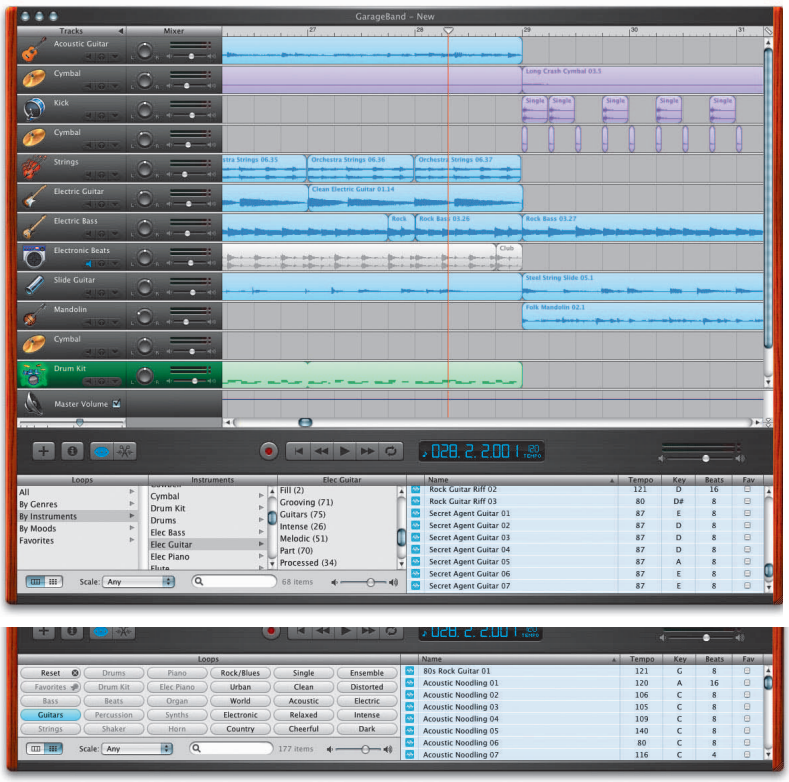
Note: GarageBand proposes saving new compositions into your Home: Music: GarageBand folder, although you can file them anywhere.

After a moment, the GarageBand window appears. To view the thousands of prerecorded musical tidbits (called loops), choose Control: Show Loop Browser, or press ⌘-L. The buttons shown at the bottom of "Loop da loop" appear.

Now the fun begins. Click the name of the instrument you'd like to hear – Drums, for example. At the right side of the screen, you see a long, scrolling list of drum licks in various styles: Alternative Rock, Classic Rock, Club Dance, and so on. Double-click one to hear it; click again to stop playback.

Of course, it could take you all day to try out every one of these recordings. Fortunately, there are several ways to sift through the loops:

- Click successive rounded buttons in the Loop browser to narrow the choices in the list of recordings. For example, if you click Drums, then Electronic, Dark, and Intense, you winnow down the list to only three different loops. To bark up a different tree – for example, to try out loops recorded by a different instrument – click the Reset button and then begin again, this time with, say, Bass.
- The loops with green icons are "software instruments," triggered live during playback by GarageBand's built-in



Loop da loop
As in button view, the far-right listing shows the matching loops for the subcategory you've now specified.

Tip: If you know a little bit about music, you can also use the Scale pop-up menu at the bottom of the window. It lets you view only loops recorded in major keys, minor keys, or no particular keys. (The Good for Both option refers to loops that don't clash with major or minor chords: moving octaves, open-fifths power chords, and so on.)

Tip: If you drag the lower right corner of a loop, you can shorten it. That way, you can, for example, trim down the loop to only its first half – and then, by dragging the upper-right corner of that, make that half repeat over and over. Also, once you've created several repetitions, you can move the cursor near the indentation of the first loop repetition, and resize the duration of the area that gets repeated.

sound samples. You can edit or transpose the notes just as you would music that you played yourself. The loops with blue icons are actual digital recordings of professional studio musicians. You can't edit the notes. Incredibly enough, though, you can change their tempos and even transpose them, thanks to some very slick software voodoo.

- Click the Column View button at the lower-left corner of the screen. Now your list of loops resembles the iTunes category browser. The leftmost column lets you specify how you want to search (by genres, by instruments, and so on). The second column lists your options in that category (Country, Electronic, and so on). The third column breaks down that option into finer subcategories (Cheerful, Dry, and so on).
- In either button view or column view, you can type the name of the instrument or feeling you're looking for into the Search box at the bottom edge of the browser – banjo, ballad, Latin, or whatever – and then press Return. The rightmost list of loops shows only the matches.

When you've found a good loop, drag its name upward into the main track window. At that point, it shows up as a green or blue bar, which you can drag by the middle to reposition it.

Navigating GarageBand

Jump around in your composition in either of two ways:

Click in the ruler See the measure ruler at the top of the window? Click it to plant the Playhead where you want playback or recording to begin.

Type a specific location See the measure counter – the blue digital numeric readout to the right of the playback controls? This display can show you the position of the Playhead in either of two ways. First, it can show this format: 25.15.3.100, which refers to measures, beats, sub-beats (that is, quarters of a beat), and ticks (of which there are 240 per sub-beat). Second, it can display pure time code (hours:minutes:seconds:thousandths of a second). To switch between these two displays, click to the left of these digits, where you see the tiny clock or musical note.

This isn't just a display; it's also a navigation tool. Double-click the number you want to edit (which now begins to blink), type new numbers, and then press Return. The Playhead jumps immediately to the point you specified. Once you've deposited a loop into your composition, you can use the tape-deck-style transport controls beneath the track display.

Work with tracks

In recording-studio jargon, a track is one of several parallel streams of musical sound (usually one per instrument) that all play back together.

When you drag a loop into an empty area, you create a new track. (You can also drag a loop into an existing track.)

Note: You can also set up a new empty track by choosing Track: New Track (⌘-Option-N), or by clicking the + button beneath the track list. In that case, a dialog lets you choose the instrument you want the new track to play.

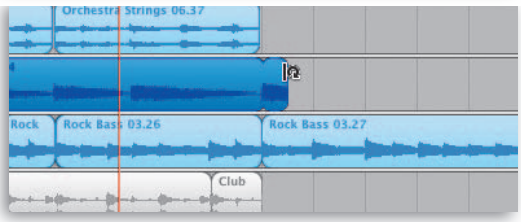
The idea of GarageBand is to build a set of tracks that sound good together. (Or, rather, that sound the way you want them to sound; these days, good is a relative term.)

Here's some of the other fun you can have with tracks:

- To rename a track, click its icon in the Tracks column. Down below, you can edit the Name box in the Editor panel. (If you don't see it, choose Control: Show Editor, or press ⌘-E. Details on the Editor panel in a moment.)
- During playback, it's frequently useful to isolate a certain track – like shouting, "OK, everybody shut up but the bass!" To do that, click the headphones icon just beneath the track name. When it's illuminated in blue, all the other tracks fall silent. You've just soloed a track.
- You may want to silence one track so that you can hear the others. That's the purpose of the tiny speaker icon – the Mute button – beneath the track name.
- You can zoom in or out of your piece – stretching or condensing the measure ruler at the top – by pressing Ctrl-left arrow or Ctrl-right arrow. (There's a slider below the track list that does the same thing.)

There's more on working with tracks later.

Tip: You can solo more than one track, isolating just two out of your five, for example. Also, feel free to solo or un-solo a track during playback.



Repeat after me
By dragging the upper-right corner of a loop, you make it repeat for the number of measures indicated by the ruler. The most common use of this feature, of course, is to lay down the drum track for the entire song.

Module 2: virtual instruments

Much more fun awaits if you've got a cheapo USB piano keyboard (like the M-Audio Keystation 49e that Apple sells at its online store), a MIDI keyboard with a USB interface connected to your Mac, or a MIDI drum set.

You can actually record your live performances – and clean up your mistakes afterwards. The sound you hear as you play is up to you: a piano, string orchestra, guitar, or even a heavenly choir.

Start by creating a track set to the instrument you want to hear. For example, choose Track: New Track. The dialog box shown in "Instrumental" appears, where you can specify what instrument you'll be playing.

To try out these instruments, click an instrument family at left and the individual instrument sound at right. Play a few keys on your musical keyboard to hear the sound. You'll notice that GarageBand's samples are velocity sensitive: the notes sound louder or have stronger attack as you press harder (if you have a touch-sensitive keyboard).

When you've found the instrument you want, click OK. Rewind to the beginning of your new track, if necessary (although you can start recording anywhere). You might want to choose Control: Count In, which makes GarageBand play one bar's worth of countoff clicks before you begin – the software equivalent of, "And-a one! And-a two! And-a three! And-a four!" – to give you time to get your hands on the keyboard.

If you don't already have a few tracks that will help keep you on rhythm, choose Control: Metronome (so that a checkmark appears). GarageBand will click off the beats as you play to help you stay on rhythm.

Finally, click the round, red Record button. GarageBand counts you in and then begins recording your performance, while simultaneously playing back any other tracks that you've laid down, either using canned loops or live performances.

Tap the Space bar when you're finished. Rewind, or drag the Playhead, and then press the Space bar to play back your performance.

continues page 66

Tip: The Mute button is especially useful when you're trying to decide which of several variations on a track is the one you want to keep.

Tip: If you don't have a USB or MIDI keyboard, you can still fool around with GarageBand's virtual instruments by choosing Window: Keyboard. A tiny keyboard appears on the screen, with keys that you can 'press' by clicking. You won't become a virtuoso using this crude tool, and of course you can't play more than a single note simultaneously – even with a two-button mouse. But at least you'll get to hear what the sounds sound like until you can get the money together to buy a USB musical keyboard.

Tip: You can cheat just like the pros do! You can record your performance at a slow tempo, so that you'll sound like a musical virtuoso when the piece plays back faster. To specify the tempo, click and hold the word Tempo (just to the right of the measure counter, beneath the tracks). A slider appears, which you can drag up or down to control the playback or recording speed.

Instrumental
This dialog box lists the software instruments available in GarageBand – the sounds that you can trigger with a USB or MIDI musical keyboard.

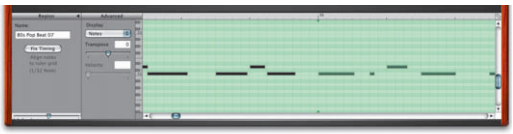
Editing your performance

Nobody's perfect, but you'd be surprised at just how imperfect your favourite pop musicians are. Believe it or not, just about every song you ever hear on the radio or on an album has had wrong notes cleaned up, emphasis added, and multiple takes sliced, diced, and recombined. You do the same kind of work in the Editor panel. It may take a moment to find the actual horizontal bars that represent the notes you recorded. Use the scroll bars, or drag the thick horizontal divider between the upper and lower halves of the window to enlarge the editor window.

Here are some of the ways you can edit your recording:

- Delete a bad note by clicking the horizontal bar with the mouse to select it. (The note plays and changes colour.) Press the Delete key.
- Insert a new note. While pressing the ⌘ key, you can draw a new note right into the Editor window.
- Drag a note up or down to change its pitch – a great way to fix a bit of sloppy piano playing, for example – or drag it right or left to change its position in time.

Tip: If you've told GarageBand to loop a certain region as described in the box on the facing page, you can keep laying down additional notes on each repetition, building a cumulative, multi-layered instrumental part. This is a particularly useful tactic for recording a drum part – the kick drum on the first pass, the hi-hat on the next, and so on.



Bar keeper
If you don't see this panel at the bottom of the window, choose Control: Show Editor or press ⌘-E. The darker the bar, the harder you struck the note.

Looping

GarageBand can loop a specific stretch of music over and over again as you work, so that you can hear the changes without having to mess with the Play, Stop, and Rewind buttons.

Click the Loop button at the right end of the playback controls. Then drag through the ruler to highlight, in yellow, the section you'd like to record (or drag the edges of the existing yellow bar). When you click the Record button, GarageBand cycles through that passage over and over again, as you work on editing that passage.

Tip: Another great way to get your bearings is to use the Zoom slider at the left corner of the window.

Transposing notes

Click the triangle to the right of the Region panel name to reveal the Advanced panel. Here, you can drag the Transpose slider to shift the pitch of selected notes. (To transpose the whole track, choose Select All first.)

Note: Here's also where you can adjust the velocity of the selected notes – how hard they were struck. Velocity isn't quite the same thing as volume, because sometimes hitting a note harder doesn't just make it louder – on most instruments, it actually changes the character of the note produced.

Tip: As you drag a note, it snaps to the next rhythmic grid line (quarter note, eighth note, or whatever you've selected using the Grid pop-up menu described on the next page). If you'd like to be able to drag freely, choose Control: Snap to Grid, so that the checkmark no longer appears.

Clean up your rhythm

When you quantize your performance, you tell the software to nudge all of your notes so that they align with an underlying rhythmic grid – to the nearest eighth notes, sixteenth notes, or whatever.

Certain music benefits immensely from this treatment. In fact, the debut of computerized quantization was largely responsible for the birth of disco and rap, because it gives everything a robotically perfect, mechanized-sounding rhythmic feel.

Other kinds of music are better off unquantized, so that they retain their original human feel; quantizing totally nukes grace notes, glissandos, and subtle syncopations.

In any case, here's how you quantize something you've played into GarageBand:

1. Click the name of the track you want to quantize. Unfortunately, in GarageBand 1.0, you can't quantize only a certain region of notes – only the entire track.

2. Using the Grid pop-up menu (the tiny, tilted-ruler button just above the Editor panel's vertical scroll bar), specify the degree of quantization you want.

Do you want your notes nudged so that they begin at the nearest quaver, semiquaver or triplet? This popup menu even offers four levels of swing, meaning that the software will nudge your notes more or less toward dotted-quaver, -semiquaver or triplet rhythms.

3. In the Region panel at the left side of the Editor panel, click Fix Timing.

This button is dimmed if any notes are selected in the Editor panel, since you can quantize only an entire track. (Click an empty spot on the Editor panel to deselect them.)

After performing the quantization, play back the result to make sure you haven't over- or under-quantized, wiped out grace notes, or suffocated the humanity of your performance. (And if so, choose Edit: Undo.)

Tip: GarageBand offers ten levels of Undo – that is, you can successively take back your last ten edits – so you should feel free to experiment with things like quantization without fear that you're ruining your piece.

Copying and pasting

Most music is, to some degree, repetitive, so the Cut, Copy, and Paste commands are especially useful. Select the notes you want to copy, using the Editor panel (or choose Edit: Select All, if you like). Choose Cut or Copy from the Edit menu, position the Playhead where you want the notes to reappear, and choose Edit: Paste.

The musical material you copied or cut now appears, both in the Editor panel and in the track display above.

Module 3: Live audio

If you sing, speak, or play an instrument into your Mac, GarageBand can save the results as digital audio files that you can edit, stack up to create harmony, or process with special sound effects.

Start by plugging in your microphone (or use the built-in microphone on your laptop or iMac). Pay a visit to System Preferences: Sound: Input tab, to make sure that the correct microphone is selected. (If you make any changes here, quit and reopen GarageBand to activate them.)

Create a new track (Track: New Track). In the New Track dialog box, click the Real Instrument tab. Click the kind of instrument you're about to play. If you intend to speak or sing, click Vocals.

On the right side, specify what effects you want to apply to your recording from a long list of reverb and other processing effects. With a pair of headphones, you can try them out one at a time by listening as you test your microphone. (Click Unprocessed if you don't want any effects.)

If you're going to sing, you'll probably want to use headphones plugged into your Mac, so that the Mac won't pick up the other tracks as you sing along to them. (At the bottom of the dialog box, the Monitor option controls whether or not you'll hear your own, live singing played through the speakers while recording, as explained in "Shriek peak".)

When you click OK, the new track appears. Set up the Count In and Metronome options, click where you want to start recording (or click the Rewind to Beginning button),

Tip: The names in right-hand column are the labels that Apple gave its prefab sets of settings. You can view the details by opening the Details panel at the bottom of the dialog box. There you'll see that you can create and save your own presets, too.

and then click the round red Record button. As it plays the tracks you've built so far, GarageBand simultaneously records your live sonic performance.

When you're finished recording, rewind (or click in the ruler) and tap the Space bar to hear how you did. You can also adjust the relative volume.

Then the fun begins – you can add another track, and another, and layer your performances. If you're musically inclined, you might want to sing harmony with yourself. And even if you're not, try singing exactly the same thing on multiple tracks. That's a trick that the Beatles used to use; it creates a professional, studio-chorus sound.

Note: Your recordings appear as red bars, so you can distinguish them from the blue and green GarageBand loops. (A key difference: you can't change the tempo or key of digital audio you record yourself. Sound files that you drag into GarageBand from the Finder, and sound-effect loops like cymbal crashes and crowd applause, also show up in red, to remind you of their similar limitations.)

Getting it right

It's the rare performance that's perfect on the very first try, so GarageBand is designed to let you take several stabs at it. You can hang on to all of your takes, and when you determine that one of them was indeed perfect, you can toss the bad ones. Here are two ways to go about this process:

Create a new track for each attempt Use the Mute button to silence previous tracks as you record new ones.

Re-record over a certain passage Even if you've already recorded into a track, you can position the Playhead and record a new take. The new sound will record over what was already there, resulting in a new, distinct 'block' in the track display.

Putting it all together

When your individual tracks are sounding good, it's time to start thinking of the composition as a whole. After all, your public is waiting.

Track volume levels To adjust the volume levels of tracks relative to each other, expose the Mixer panel shown right. (Either click the right-pointing triangle next to the word Tracks, or choose Track: Show Track Mixer.)

Here's what the mixer panel lets you do:

- If you're listening to your piece in stereo, you can specify where a certain instrument is on the imaginary left-to-right soundstage, just by clicking the edges of the L R knob.
- You can make the overall volume of a track rise and fall during the course of the piece. To the right of the Solo (headphones) button is a down triangle that makes a new Track Volume strip appear.
- GarageBand also offers an overall volume map for the piece; choose Track: Show Master Track to see it.
- You can adjust the reverb and other effects for any track just by double-clicking its name. In the resulting box, expand the Details panel to view Gate, Compressor, Equalizer, and other effects. (You can also double-click the Master track's name to apply an overall effect to all tracks together.)
- You can adjust the tempo of the piece and transpose the key as described earlier. Remember, though, that making these changes affects only GarageBand's loops and whatever you've recorded with a USB or MIDI musical keyboard. You can't change the key or tempo of your live microphone recordings, so your singing should be a last creative step.

Shriek peak

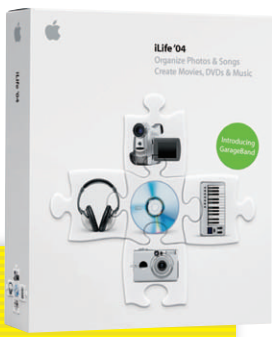
If you're using headphones, turn the Monitor option On so you can hear yourself sing. If you're not using headphones, turn it off, so that you don't get the squealing shriek known as feedback as you sing.

Pump up the volume

Once you've exposed the Track Volume strip, you can click on the coloured line – a graph of the track volume – to insert a handle, which you can drag to make the volume rise and fall over time. (Make sure that the Track Volume checkbox is turned on if you want to hear the effect.)

When the piece is done, you're ready to bring it to your adoring fans. Choose File: Export to iTunes. After a moment, iTunes opens automatically, and your GarageBand piece appears in its music list.

From here, you can distribute your song anywhere that fine iTunes songs are distributed: transfer it to your iPod, burn it to a CD, export it as an MP3 (or AIFF or AAC) file, or just let it play over and over again, with the iTunes laser-light show filling your vision. **MW**



Apple iLife '04

Pros: A mature fully featured suite at an incredible price; new GarageBand application; previously unavailable services to be available outside the US.
Cons: No longer a free download.
Min specs: G3 Processor; Mac OS X 10.2.6; 250MB of space needed for iTunes, iMovie and iPhoto only. 4.3GB or disc space required for full install including GarageBand and iDVD (see individual scores for minimum specs).
Price: £39 including VAT.
Star Rating: ★★★★★/9.0

The iLife suite is no longer a freebie, and only iTunes is still downloadable. It is now a pretty mature suite of incredibly useful tools that you Mac shouldn't be without. But now that Apple is charging us for this stuff, we took a more critical look at what you get. It's easy to rave about something if it's free.

The first thing to look at is the price tag. For a boxed copy of iLife, including a CD and a DVD (the DVD holds the massive iDVD and GarageBand; CD-only users can't access these), Apple is asking a paltry £39, and that includes VAT. It may not be free anymore, but it's darn cheap.

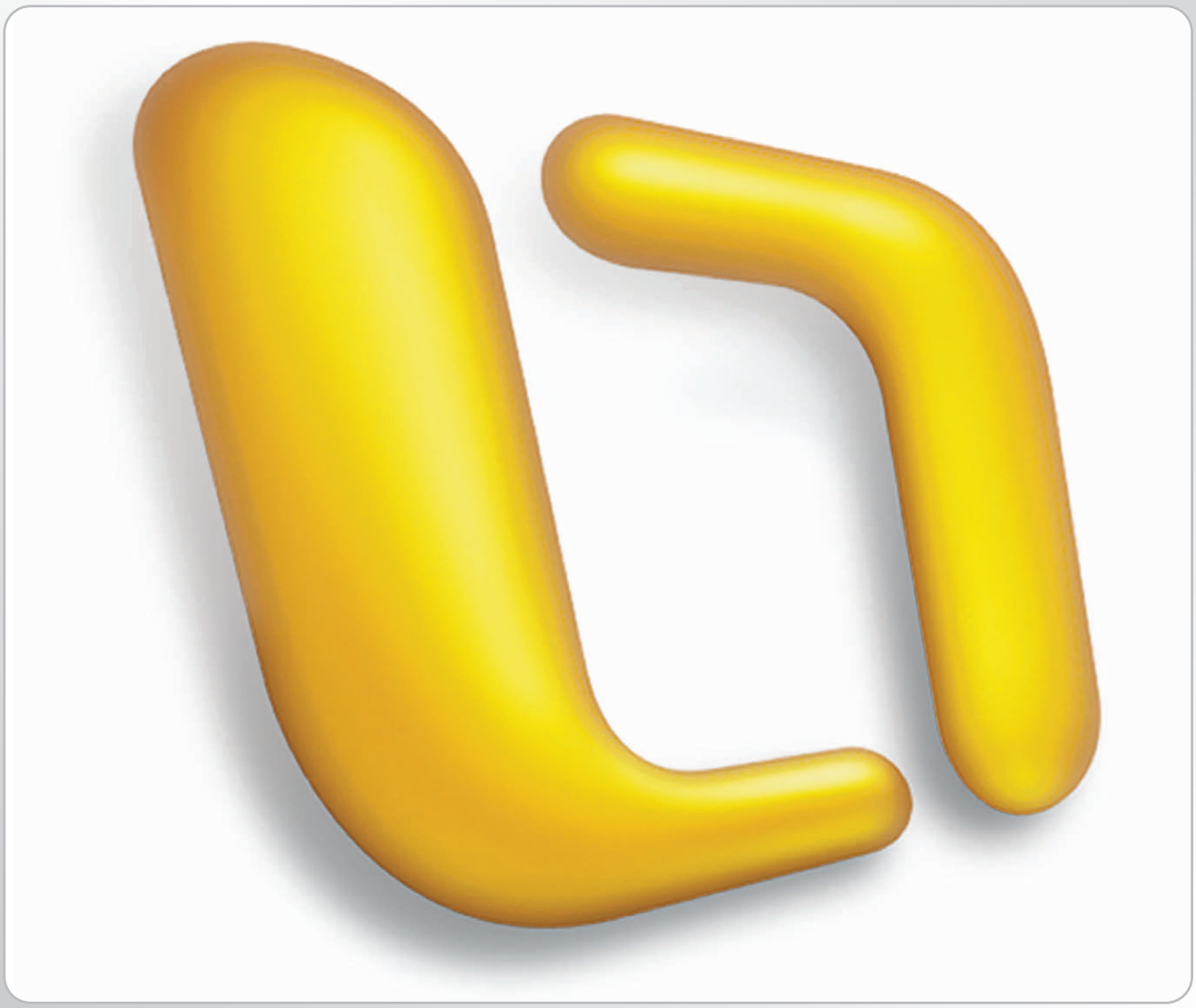
Previous versions of the iApps included features that were unavailable outside the US. Indeed many still aren't. The one we miss the most is the iTunes Music Store. It's coming, maybe before the end of June, but just not quite yet. Less critical, but still a bug bear, is print-ordering features from iPhoto that have been available to North America for years, but not to us. Amazingly, Steve Jobs actually apologised for this taking so long at his recent Macworld Expo keynote address in San Francisco, and we are promised the ability to order prints and custom books from iPhoto in March.

Office

A first look at the latest version of Microsoft's business behemoth.

By Kelly Lunsford, Philip Michaels, and Jason Snell

Although Microsoft's Office 2004 won't be on the shelves until the middle of this year, we got a sneak peek at its new features. These additions – from a command centre for related correspondence, calendars, and files, to an audio recorder that gives your typing fingers a rest – grabbed our attention. Take a look at the next version of one of the most important application suites for the Mac.



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2004

Project Center

The biggest addition to Office 2004 – an organizational tool called Project Center – resides in Entourage. But there's more to Project Center than email. It reaches across Word, Excel, and PowerPoint, providing a single place from which to jump to documents, spreadsheets, presentations, and email scattered across your hard drive.

Project Center is at the heart of Microsoft's efforts to make organizing and managing information with Office easier.

Project Center extends existing features, combining Entourage's PIM capabilities – contact information, calendars, and to-do lists – with direct access to important files. And it links related items: you can see emails about a specific project alongside a calendar listing meetings, appointments, tasks, and due dates for that project.

You can set-up automatic rules that link projects to new emails messages as they hit your in-box. And projects can be shared with other Entourage 2004 users.

Getting started

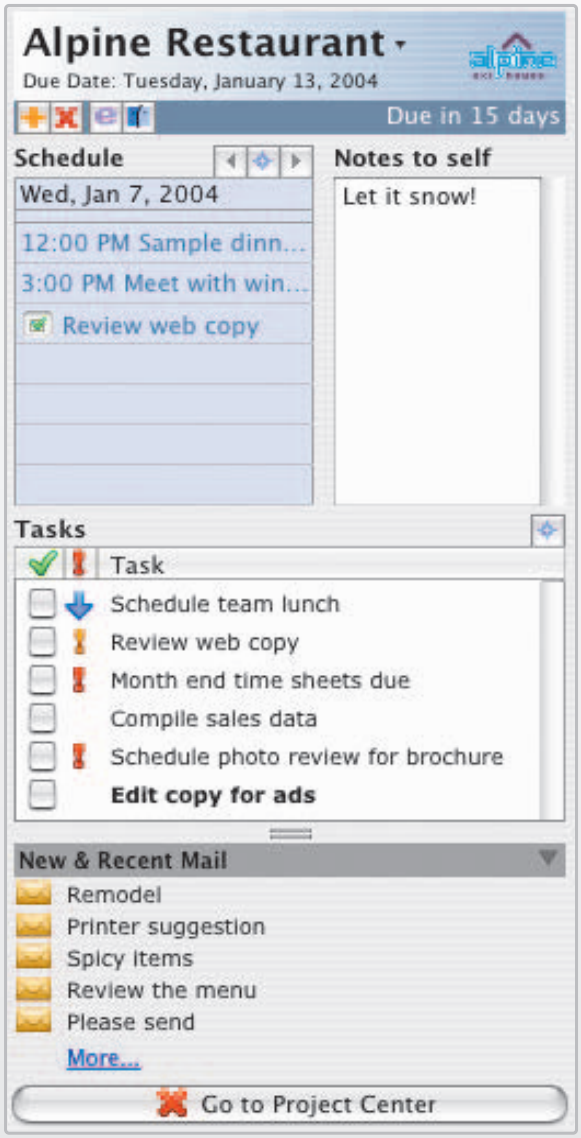
The New Project Wizard's four screens walk you through setting up a project. In the first screen, name the project, set due dates, and enter notes to yourself. You also assign a colour and an icon to the project, making it easier to identify visually. In the second screen, you create Project Watch Folders and import items into the project folder. The third screen helps set rules for automatically adding new and related email messages to a project folder as they arrive in your in-box. The final screen is a summary pane with help information.

Just a click away

Even when working in Word, Excel, or PowerPoint, Project Center is still within reach. A Project Toolbox appears in the other Office applications (you access it via the View menu or by clicking on an icon in the toolbar).

It features nearly all the information you get from Project Center's Overview tab – a daily schedule, a task list, a notes window, and a list of new and recent email.

A button at the bottom of the toolbar lets you jump directly to Project Center.



continues page 72

The big picture

Project Center's Overview tab gives the status of many aspects of a project. A seven-day calendar displays related appointments and meetings for any week. Two columns at the bottom of the screen offer quick, customizable access to everything from email to past-due tasks.

Project Center's home

The Project Center button is where the Custom Views button used to be. But Custom Views isn't gone altogether; it's part of the preview pane on the left side of the Entourage window.

The final countdown

Project Center keeps a running count of how many days remain until a project is due.

Picture ID

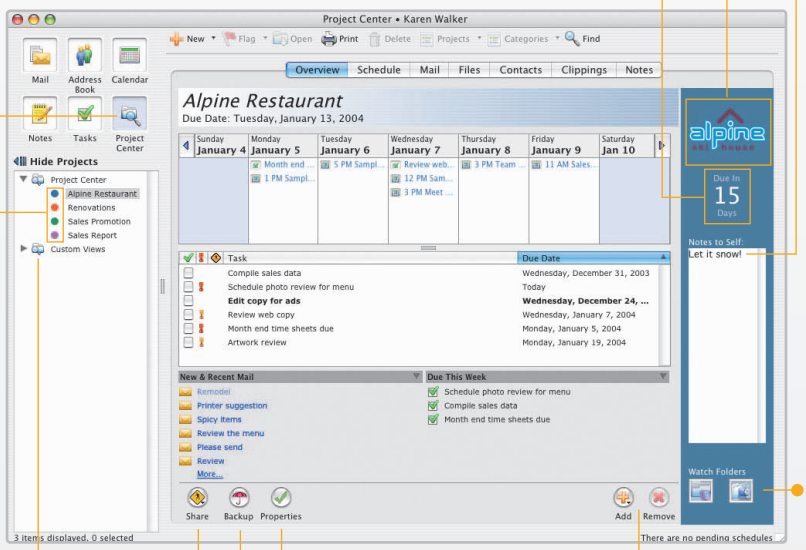
Assigning a logo or an image to your project helps you identify a project quickly when it appears in places such as the Project Toolbox.

Make a note of it

Use this window to jot down reminders and memos.

Keep watch

Watch Folders, represented by icons in the lower-right corner of Project Center, let you keep an eye on important email and documents. The Entourage Watch Folder – sporting the Entourage logo – is a folder in Entourage's Mail view that's created with each project you start. Filing any email messages in your Entourage Watch Folder connects it to a specific project. The Project Watch Folder bears a Finder logo, and links to a folder on your hard drive, where you store all project-related files. (These files also appear in Project Center's Files view.) When starting a project, you can either automatically create a Watch Folder or select an existing one anywhere on the hard drive.



Colour coordinated

Each project in Project Center gets its own colour. Anything that belongs to that project sports a dot of that hue.

Custom views

You can control the kinds of information Project Center displays: for example, Recent Items, Due This Week, Past Due, Categories, New Mail, New & Recent Mail, Important Contacts, MSN Messenger Contacts, Recent Notes, and Recent Files.

Share your work

Just click the Share button to let other Entourage 2004 users look at email messages, calendars, tasks, files, clippings, contacts, and notes via a network server. If you don't want to share a part of your project, just deselect that item. Only invited users can see shared material.

Save your work

The Backup button lets you back up and archive projects – a very useful feature once something is completed. You can archive finished projects to a separate database file, and then remove them from Entourage.

Property management

Here's where you change a due date, icon, or any other part of a project.

Easy addition

Click the Add button to import files into a project – even non-Office files, say, from Adobe Photoshop or Macromedia FreeHand. Click the Remove button to keep a file on your hard drive but take it out of a project.

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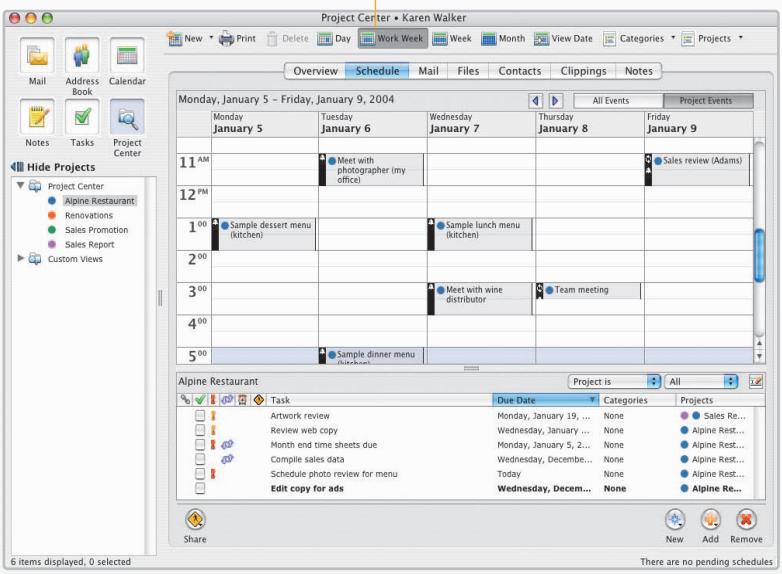
Other views

In addition to Overview, Project Center sports six other tabs that let you see specific information about your projects. You can use these tabs to stay on top of those small details that can make a big difference in your work

Schedule

This tab gives a more in-depth project calendar, with the option of daily, weekly, or monthly views. You can also view all calendar events or just those associated with the project. Schedule also has a task list, where you can cross out tasks as you complete them.

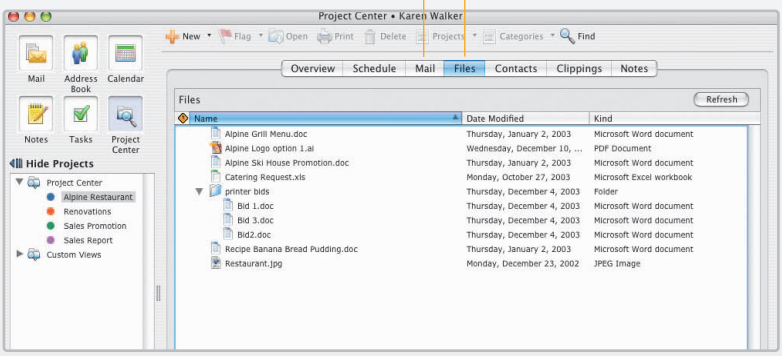


Files

In this tab you'll see lists of the assorted documents imported into a project, their modification dates, and their file types. The Files tab has its own Share, Add, and Remove buttons, along with a Send button that attaches a selected file to an email message and sends it, so you don't have to create a new message and attach the document.

Mail

Go to this tab to see all the email correspondence associated with a project. As in your Entourage in-box, you can read email messages, respond to them, and forward them.

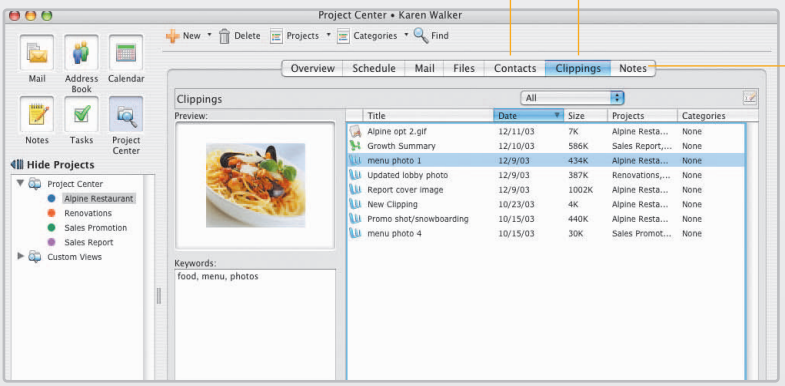


Clippings

The Clippings tab is where items from the Scrapbook – a new feature of Office – are contained. This tab gives you quick access to all text and graphics clippings that you've saved.

Contacts

This tab resembles Entourage's Address Book, but lists only project-specific contacts. Integration with MSN Messenger lets you chat with those contacts via Microsoft's instant-messaging client.



Notes

This tab gives access to project-related sticky notes created with Entourage's Notes feature.

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Notebook layout view

Most of us dread meetings – especially meetings in which we have to take notes. It's not that we're lazy, it's just that we almost always forget to write down something important, or we need a cryptologist to decipher our own scrawls.

Word 2004 aims to alleviate "meeting phobia" with its new Notebook Layout view. Essentially a beefed-up Outline view, Notebook Layout view turns your laptop into a note-taking machine by letting you embed an audio stream of a meeting or lecture in an open Word document. As you type, Word links your notes to what is being recorded at that time. Later, when you forget whether you're supposed to call Bill or bill Carl, you can click on the audio icon next to the Bill entry and jump directly to that part of the meeting.

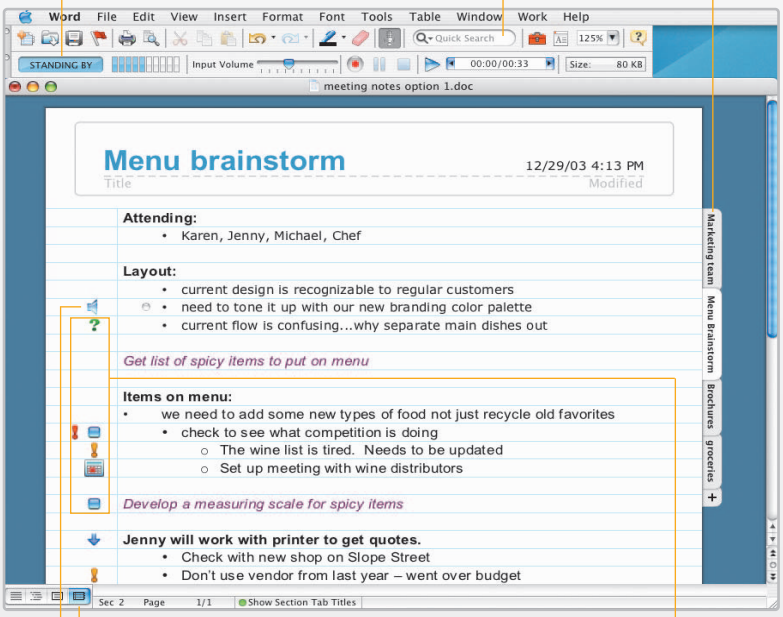
Audio Notes toolbar

The Audio Notes toolbar, accessible only in Notebook Layout view, contains controls for embedding audio in your document. You can start, stop, and pause the recording, adjust the input volume, and play-back audio.

From this toolbar, you can also monitor a file's size. According to Microsoft, a 60-minute recording saved in MPEG-4 format adds roughly 6MB to a Word document. (You can also save audio in AIFF and WAV.) You can export recorded audio as a separate file or delete it completely to get a slimmed-down version of the document.

Quick Search

Type a word in the Quick Search box and press enter, and Word highlights all instances of that term in the outline.


Word File Edit View Insert Format Font Tools Table Window Work Help
STANDING BY
Input Volume
00:00/00:33
Size: 80 KB
meeting notes option 1.doc
Menu brainstorm
12/29/03 4:13 PM
Title
Modified
Attending:
Karen, Jenny, Michael, Chef
Layout:
current design is recognizable to regular customers
need to tone it up with our new branding color palette
current flow is confusing...why separate main dishes out
Get list of spicy items to put on menu
Items on menu:
we need to add some new types of food not just recycle old favorites
check to see what competition is doing
The wine list is tired. Needs to be updated
Set up meeting with wine distributors
Develop a measuring scale for spicy items
Jenny will work with printer to get quotes.
Check with new shop on Slope Street
Don't use vendor from last year – went over budget
Marketing team
Menu Brainstorm
Brochures
groceries
Sec 2 Page 1/1
Show Section Tab Titles

Section Tabs

The Section Tabs feature divides notes into related topics. For example, a college student could keep a term's worth of history lectures in one document and create a new tab at the beginning of each class. Then, when studying for a test, he or she could quickly jump to the relevant lecture. To create a new Section Tab, click on the plus sign (+).

Tabs appear only in the Notebook Layout view. When you switch back to the Normal view, tabbed sections appear sequentially, divided by section breaks.

Recording markers

To jump to a specific place in the recorded audio, click on the speaker icon next to the relevant note. Word plays back the audio from the point at which you entered the note.

One-click access

You can access the Notebook Layout view by clicking on the Notebook Layout View button at the bottom of the window or selecting Notebook Layout from the View menu.

Note Flags

As when writing in a real notebook, you can jot reminders in the page margins. While you type, you can use Note Flags to link the text to other tasks: mark important points, add follow-up questions, create a to-do, link tasks to your Entourage calendar, and so on.

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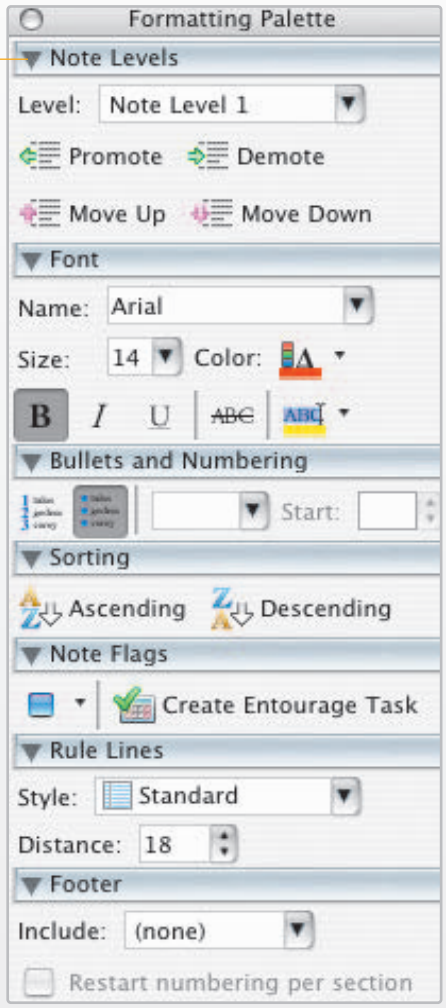
Expanded formatting

In the Notebook Layout view, you'll notice a few new headings under the traditional Formatting palette: Note Flags for marking follow-up text, settings for the document's notebook rules, and sorting options for outline items. You'll also find many of the organizational commands from the old Outlining toolbar.



Note Levels

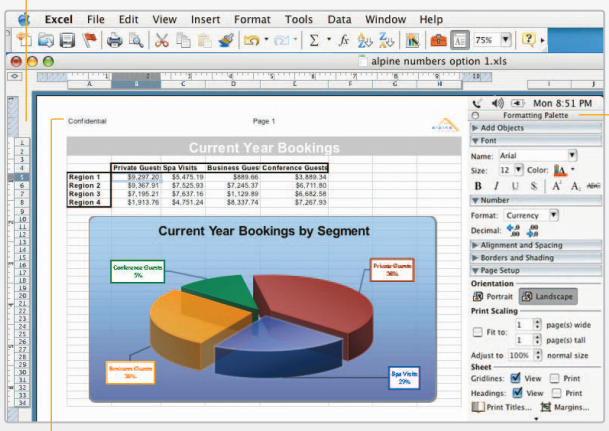
To make the Notebook Layout view truly useful, you need to get used to the way outlines organize text hierarchically. The Formatting palette's Note Levels section offers easy access to important outlining functions: promoting and demoting outline topics, creating numbered or bulleted lists, and more. (You can also use the traditional keyboard commands for these tasks.) As you reorganize items, any associated audio moves with them.

Page Layout view in Excel

Excel's new Page Layout view, which debuts on the Mac, lets you view Excel files in the same detail you're used to seeing in Word's Page Layout view.

Marginal improvements

You can quickly edit document's margins, and see how changes will alter your printout.


Excel File Edit View Insert Format Tools Data Window Help
alpine numbers option 1.xls
Current Year Bookings
Current Year Bookings by Segment
Formatting Palette

From header to footer

You can preview and edit your document's headers and footers in the page layout.

A better view

In Page Layout view, the Formatting palette includes settings previously available only in the Page Setup dialog box. Now you can quickly switch between portrait and landscape modes, scale a document to fit on a fixed number of pages or to print at a particular percentage, and turn grid lines and headings on and off.

Know your rights

In the Windows version of Office 2003, Microsoft introduced Information Rights Management (IRM). The company touted IRM as a way to restrict printing, forwarding, and copying of email messages and Office documents. Mac users couldn't create or access IRM-protected files, and that's still the case.

And some people who run Office Windows are out of the loop, too. To create the secure files, Windows users must have either the Professional or the Professional Enterprise version of the 2003 suite. To view IRM-protected files, Windows users must have Office 2003 or a Microsoft-supplied viewer.

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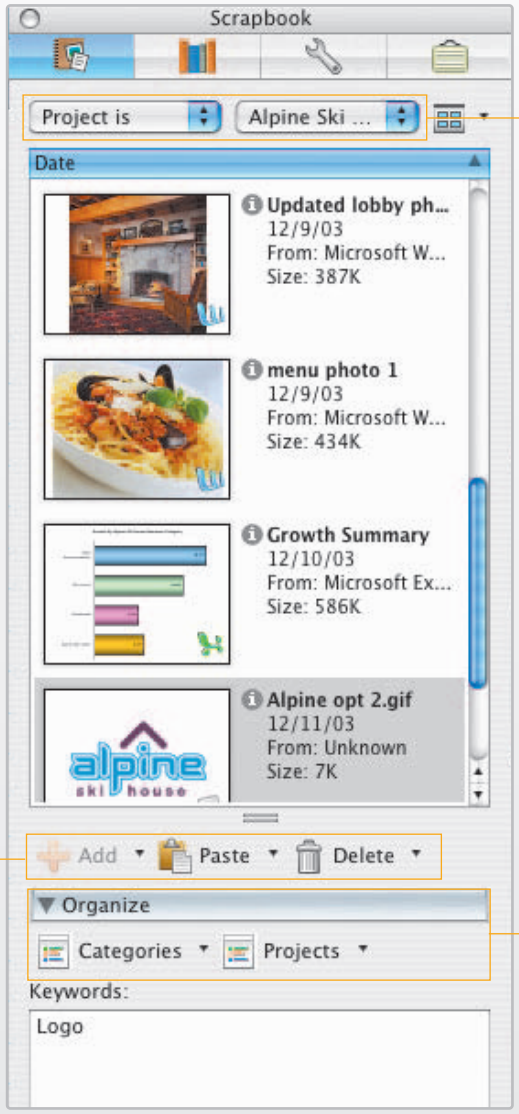
Scrapbook

In OS 9, the Scrapbook utility functioned as a permanent Clipboard – you could add almost any item to the Scrapbook and then, later, retrieve it for use elsewhere. Office 2004 goes old-school with its new Scrapbook feature, available via the new Toolbox palette. You can store text and graphic tidbits in the Scrapbook by dragging them in from any Office application. Once you've put an item in the Scrapbook, it's always there when you need it – for example, if you've placed a photo in Powerpoint but now need to reuse it in Word.

In and out

Move items into and out of the Scrapbook in a flash with these buttons, which let you add a selected item to the Scrapbook, paste a Scrapbook item into your document and delete items from the Scrapbook.



Sort and search

Office 2004's Scrapbook does the old Apple Scrapbook one better by allowing sorting and searching. You can assign keywords to items and assign items to categories and projects. Using the two pop-up menus, you can view a Scrapbook item by creation date, keyword, title, size, creation application, and project.

Stay organized

The Organize section turns the Scrapbook into a miniature media database. Attaching keywords, categories, and projects to your Scrapbook items makes them easier to find later.

Price protection

Office 2004 is likely to cost the same as the previous version of the suite, across all three editions introduced by Microsoft last autumn (see "Office reshuffle," News, October 2003).

The Standard Edition of Office 2004 – which includes all four Office applications – will sell for £369 if prices stay fixed. The £479 Professional Edition includes the same programs, as well as the latest version of Virtual PC with Windows XP Professional. The cost of the Student and Teacher Edition remains £119, with users able to install the suite on as many as three Macs.

If you buy Office v.X before June 30, 2004, Office 2004 will cost you little or nothing. Upgrading to the same edition of the business suite is free; upgrading from the Office v.X Standard Edition to the 2004 Professional Edition costs £64. If you have the academic edition of Office v.X, upgrading to the 2004 Standard Edition is £64 and upgrading to the Professional Edition of 2004 is £88. **MW**

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Corral your contacts

Keep all your contacts organized across devices. By Christopher Breen

If you manage a bandolier of gear – a Macintosh, a mobile phone, a Palm device, and an iPod – you know how difficult it can be to bring order to the information you've stored on them. The following tips will help you synthesize and synchronize the contacts on your computer and your peripheral contraptions.

Make a commitment

If your contacts are scattered across multiple programs and devices, it's time to choose an application and stick with it. Doing so ensures that all your contacts are within easy reach. After all, once you've searched two or three places for your Aunt Vilma's number, you might as well have dialled a 118 number.

So which program will it be? Would you like your contacts to be as fully integrated with the Mac OS as possible, so you can easily access them from within Apple's Mail, iChat, and iCal? Do you have a mobile phone compatible with Apple's synchronization utility, iSync (**www.apple.com/isync**)? Then OS X's Address Book is for you.

Will Microsoft Entourage be your email client until death do you part? You'll find it easiest to use Entourage X (£99 including VAT; **www.microsoft.com/mac**) to also manage your contacts and synchronize with your Palm.

Need to share your address book and calendar with colleagues? Now Software's Now Up-to-Date & Contact (£94; **www.nowsoftware.com**; CU, 020 8358 5858) includes group-sharing capabilities as well as Palm synchronization. Creating an online contact list is another possibility, however, if you love Address Book or Entourage and want to share with co-workers (see "Online office 118", page 90).

Coalesce your contacts

To commit to one application, you'll need to move contacts from the various places you've stashed them.

Address Book, ho! If the integration of Address Book appeals to you, follow these steps to transfer contacts from Microsoft Outlook Express, Entourage, Palm Desktop, Qualcomm's Eudora, or Netscape into it:

1. Open the AppleScript folder inside the Applications folder at the root level of your OS X volume and double-click on the Install Script Menu Applications icon (Panther) or the Script Menu.menu icon (Jaguar). This places an AppleScript menu (represented by a small black scroll) in your menu bar.

2. In Jaguar, select Mail Scripts from this menu and then the Import Addresses script from the resulting submenu. In Panther, select Address Book Scripts and then choose Import Addresses from its submenu. You'll be asked to choose the application you'd like to import addresses from. Select one of the choices and click OK.

3. Depending on which application you choose, you may be asked to locate a particular file – a text file that includes addresses you've exported from an email client, for example. If so, locate that file and continue clicking buttons as prompted until the script imports your contacts.

If you have contacts stored in more than one place you can run this script multiple times, selecting a different application each time. Note that doing so may cause duplicates to appear in Address Book. You'll have to remove them manually.

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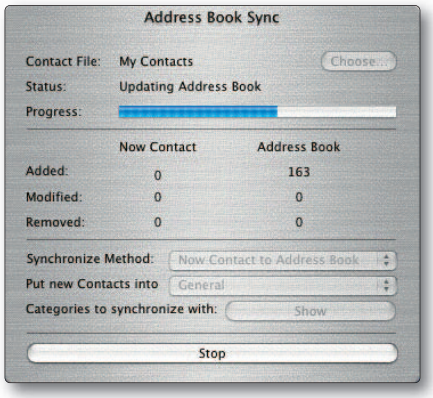
The art of business

Every businessperson knows that a PowerPoint presentation just isn't the same without some snazzy art. The same goes for quick flyers and Web pages you're putting together your-self. Hemera's BizArt (**www.hemera.com**) can help. This stock-art collection includes 56,000 royalty-free images organized into business-friendly themes such as customer service, finance, government, health care, human resources, and technology (a few samples are shown here). The DVD contains photos, clip art, and photo-objects (images with their backgrounds removed).

Scholle Sawyer McFarland

Online office 118

There's nothing handier than a central address book for the office. But if Now Contact isn't the right application for you – for instance, because you need vCard support or you desire Address Book's integration with the i-apps – you aren't out of luck. You can create a central contact server on the Web. Do this for free by signing up for a Yahoo email address and importing your address book into Yahoo. Give everyone in the office who needs access to your homemade contact server the address and password for this account. (Note that everyone who accesses the address book has the power to add and delete names, as well as to erase the entire address book in one fell swoop.)



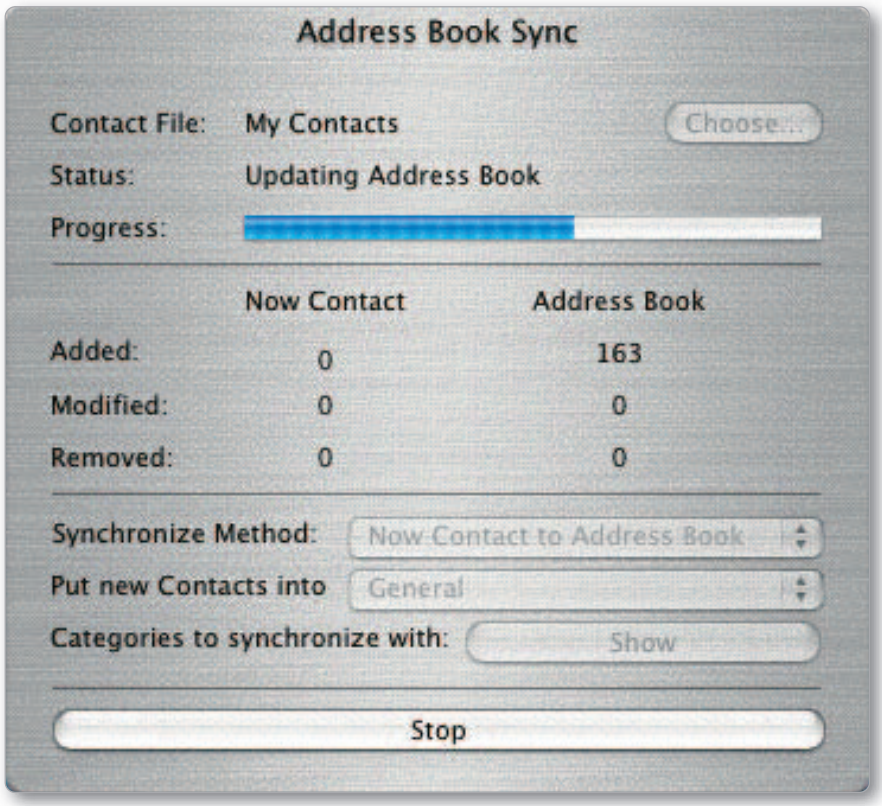
Sync now
Now Software's Address Book Sync lets you synchronize contacts between Now Contact and OS X's Address Book.

This script doesn't support Now Software's Now Contact. To move contacts from Now Contact to Address Book (or vice versa), use Now's free utility Address Book Sync (see "Sync now"). Download it from **www.nowsoftware.com/absync.html**.

Leaving Address Book If you'd like to export contacts from Address Book into another email client or personal information manager (PIM), you'll find it easy to do as long as the intended recipient supports the vCard standard. (Entourage and Palm Desktop do, but Now Contact doesn't.) This cross-platform file format allows you to share contacts among vCard-compatible applications by copying vCards from one application to another.

To get started, just select the contacts you want to export, and choose Export vCards from Address Book's File menu. To add the vCards to Palm Desktop or Entourage, simply drag them into the program's address book window.

You also have options for moving Address Book contacts into a program that doesn't support vCards. The Address Book Sync utility takes care of issues with Now Contact. For moving into Netscape, Yahoo Mail, and Outlook Express, use David Martin's free Address Book Exporter (**www.gwenhiver.net/applications/addressbookexporter/index.php**).



Sync now
Now Software's Address Book Sync lets you synchronize contacts between Now Contact and OS X's Address Book.

Crossing platforms

Got some contacts on a Windows PC? You've probably been using Microsoft's email and PIM client, Outlook. Microsoft doesn't make it easy to move Outlook contacts to the Mac (or to other Windows applications). Fortunately, a few intrepid Windows developers have created tools that help.

For converting Outlook contacts to vCard files, my favourite is Oliver Stör's free (donations accepted) program Outpod (**www.stoer.de/ipod/ipod_en.htm**). It's as inexpensive as you want it to be, and it can export all your Outlook contacts in a single vCard file, which can be dragged and dropped into Address Book and Palm Desktop but not into Entourage. Outpod can also export individual contacts, which are acceptable to Entourage.

Another option, if you're moving Outlook contacts into Entourage, is Paul Berkowitz's $20 collection of AppleScripts, Export-Import Entourage X 1.2.10 (**http://homepage.mac.com/berkowit28/**). These can convert comma-delimited (Outlook calls it Comma Separated) Outlook files and transfer them to Entourage 2001 and Entourage X.

Moving Outlook contacts over to Now Contact requires some finesse since Contact doesn't currently support the vCard standard. Export your Outlook contacts with Outpod, import them into Palm Desktop, export them from Palm Desktop as a text file, and import that text file into Now Contact.

Avoid mobile madness

You really need your contacts when you're out and about with your mobile phone. Apple's iSync lets you synchronize Address Book contacts with a variety of mobile phones. That's great – unless your phone isn't supported by iSync, you're running Mac OS 9 (and therefore can't use iSync), or you want to synchronize your phone with Entourage. What then?

Alexander Traud's $10 GSM Remote (**www.traud.de/gsm/remote**) may be the answer if you have a GSM phone that doesn't work with iSync, or if you're running OS 9. The program – available in versions for OS 9 and OS X – lets you transfer contacts (in the form of a single vCard) to and from a compatible GSM phone.

To synchronize contact and calendar information between a Sony Ericsson phone and Entourage, pick up Salling Software's $25 MobileSync (**http://homepage.mac.com/jonassalling/ Shareware/MobileSync**). The program bears a striking resemblance to iSync and is just as easy to use.

Organizing your contacts takes some time and effort, but it's worth the trouble. You need never misplace an important name, address, or phone number again. **MW**

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Animate your world

Movies aren't limited to real-time action – try animating with iMovie instead. By Jim Heid

Shooting entertaining movies does not always require actors. With inexpensive software and a FireWire camcorder or webcam, you can use the world around you to create unique movies.

Imagine capturing time-lapse footage of a brewing storm, or bringing household objects to life via stop-motion photography.

These projects are easy to do, but they require some patience. When animating with stop-motion photography, just one frame is shot at a time, slightly moving the subject between each frame. Time-lapse movies are simpler to capture: point your camera at an interesting scene, and then go to the shops while your software snaps frames at a set interval. When you're finished, toys will spring to life, flowers will bloom, and you'll have a one-of-a-kind movie.

I recently looked at six top-notch, low-cost programs that help you easily create stop-motion and time-lapse movies (see "Software options"). The software chosen should depend on how much you want to spend and the type of project you're doing. I'll tell you how to set up equipment, how to avoid some common pitfalls, and what to do with your movies once they're captured. To see sample movies I created, go to **www.macilife.com/digitalhub**.

The setup

To create a time-lapse or stop-motion movie you'll need a video camera, a sturdy tripod, and some basic software. (All the programs I looked at cost less than £30 – a couple are even free.)

You'll get the best quality from a MiniDV camcorder. If you don't have a camcorder, an inexpensive USB or FireWire webcam will do. Mount the camera on a tripod and plug the camera's power adaptor into a wall outlet – batteries won't last for extended animation sessions. A tripod or other stable mount is a must for this type of film project. If the camera moves in between any of the frames you're capturing, the scene's action will have a jarring jump. Finally, connect a FireWire cable from the camcorder to your Mac's FireWire port.

Many DV camcorders shut themselves off after a few minutes if not recording to tape. You can usually bypass this feature by taking the tape out. If your camera still insists on slumbering, try leaving its tape door open.

Stop-motion strategies

Some stop-motion animators create entire sets and characters out of clay. If you aren't particularly talented with Play-Doh – or if you don't have hours to spend creating characters from scratch – use objects you find around the house. For example, put some toys in motion to create a Matchbox Car 500 race or the Battle of the Beanie Babies. You can even point the camera at the backyard and have the kids take a small step between each frame. In the final movie, they'll appear to move without walking. (The Monkees, those madcap musicians from the sixties, regularly used and abused this effect in their TV show.)

Set up the animation stage somewhere that will have consistent lighting over several hours. If you're relying on light from nearby windows, try to shoot on a cloudy day. Dramatic variations from one frame to the next will ruin the illusion of seamless motion.

Move objects just a fraction of an inch between each frame. Some stop-motion programs, such as Boinx Software's iStopMotion DV, provide an onion-skinning feature that faintly superimposes the last few frames you captured. Onion skinning provides an at-a-glance look at how things have changed in recent frames, and it guides you in making the next adjustment.

As a bonus, iStopMotion DV (as well

continues page 94

Time goes by

To calculate your frame interval, first determine the duration of the real event, and then decide how long you want your final clip to be. Finally, settle on a desired frame rate (20 frames per second is a good starting point).

Working as a team in iMovie

If you want to collaborate with others on a video project, you can parcel out different segments of an iMovie 3 project for individual editing. But what do you do when it's time to merge the completed segments back into a single project for transfer to iDVD?

You *could* export each movie segment as a QuickTime file and then import them into the master project. But you'll lose the flexibility that lets you edit the individual clips – to fine-tune transitions, for example. There is a better – though somewhat unconventional – alternative: merge the video projects using a text editor. Since an iMovie project file is simply a text file with commands for manipulating video clips, it's ripe for textual tweakery.

To divide your editing work, first import all your footage into a single iMovie project. Split the footage into clips for each editing group. Create a new iMovie project for each group; then use the Finder to move the clips belonging to each group into the appropriate project's media folder.

Once all the editors have finished editing their portions of the footage, create a new master project in iMovie that will serve as the container for the reassembled segments. You'll need to perform a quick editing operation – such as importing a photo or adding a sound effect to the timeline – to create a project file that will work for the following steps. When you've done this, quit iMovie.

Then bring the media files for each movie segment into your master project. In the Finder, open the first segment's project folder and select all the files in its Media folder – including files that iMovie generated for effects, transitions, audio, and so on. Drag these files into the Media folder for your master project. Repeat this for each movie segment.

Next, launch a text editor, such as Apple's TextEdit, and open the project file for the first segment of your movie. (Do not open the .mov file.) Locate the line AudioTrackMute: 0 0 0. Everything that follows describes the clips and edits in the timeline and on the shelf. Copy all the text below this line. Then open the project file for the master project and paste the text below the same line of text.

Repeat this process for each segment of your movie, appending each new section of text to the bottom of the master project file. Save the file when you're done.

When you open the master project in iMovie, all of the edited segments should appear in the timeline.

You can now make any final edits to the master movie, such as adding transitions between the segments.

Jeff Carlson

as the free iStopMotion Lite) offers a useful speech-recognition feature that lets you tell a Mac to capture a new frame from across the room, so you don't have to get up from the animation stage, walk over to the Mac, and click on the Capture button for each frame.

Time-lapse videos

Anything that moves or changes shape slowly is a candidate for time-lapse photography – for example, a glass filled with ice, a dying flame, or drifting shadows. However, to avoid damaging the camera when shooting sunsets or sunrises, don't point it directly at the sun.

You'll need to decide how often you want your camera to capture a frame of the ongoing action. For example, say a rosebud takes four hours to blossom and you want the time-lapse clip to play for 9 seconds. Multiply the desired video length (9 seconds) by the number of frames per second (20). In this scenario, you'll need 180 frames. Then divide the duration of the real event (240 minutes) by the number of frames you need. This reveals that you'll need to shoot a frame every 1.3 minutes, or roughly every 80 seconds. For something quicker, such as moving clouds, you'd want to shoot frames more frequently – perhaps every 15 seconds.

Postproduction

When done with a project, you'll export a QuickTime file of the finished movie. This can be played on its own, or incorporated into a larger film project by importing it into iMovie and then adding it to the iMovie timeline. For example, you may want to use a stop-motion clip of kids scooting around the garden as the opener to a movie of your child's birthday party.

Although you can clip the ends of time-lapse or stop-motion movies within iMovie, you won't be able to adjust individual frames. To do that, return to the original software.

Run it backward To put a different spin on a time-lapse clip, reverse it: see a blooming rose close itself or a glass of water turn into a glass of ice. After adding the clip to iMovie's timeline, select it and choose Reverse Clip Direction from the Advanced menu.

Add dialogue and sound effects If you've created a stop-motion movie of toy cars add some traffic sounds. You'll find a huge array of free sound effects at **www.findsounds.com**. You can use a microphone and iMovie's Audio pane to add dialogue. However, if the movie is dialogue-intensive, consider recording the dialogue first and timing the animation to it. Stop-Motion Studio by Loud offers syncing features that can simplify this process. **MW**

Software options

COMPANY	PRODUCT	PRICE	CONTACT	COMMENTS
Boinx Software	iStopMotion DV	$40	www.boinx.com	Polished interface fits into the iLife programs; includes onion skinning; supports speech recognition; creates full-screen movies.
	iStopMotion Lite	free	www.boinx.com	Includes all the features of iStopMotion DV, but limits movie dimensions to 320-x-240 pixels.
FrameThief	FrameThief	$40	www.framethief.com	Includes on-screen positioning guides and support for audio tracks; unique frame-averaging feature reduces noise and improves video quality.
Gary Fielke	DVTimeLapse	free	http://users.chariot.net.au/~gazlou/	Excellent time-lapse program; doesn't support Web cams; no stop-motion features.
Loud	Stop-Motion Junior	$35	www.loudinc.com	Simple interface; lacks onion-skinning features; no time-lapse features.
Loud	Stop-Motion Studio	$45	www.loudinc.com	Full-featured program; supports onion skinning; lets you import audio tracks to sync action with dialogue.

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Playing Live

Get the most from Ableton's looping tool. By Christopher Breen

Ableton's loop-based sequencer, the £249 (including VAT) Live 3.0 (**www.ableton.com**), is a remarkably flexible tool that musicians, DJs, and video editors use to easily create dynamic musical scores. But as can happen with any tool, you may have become accustomed to working with Live in a particular way. The following tips can help you see it in a different light.

Ambient in an instant

Although Live is an excellent tool for creating driving dance grooves, you can also use it to produce music that's anything but beat driven. With repeating loops of different lengths, you can create the kind of ethereal soundscapes on Brian Eno's Ambient 1: Music for Airports and Discreet Music.

Eno and other musicians created such works by recording tape loops of varying lengths, playing those loops simultaneously, and capturing the results in a master recording. Because the loops were of different lengths, each time a loop played, its relationship to the simultaneously playing loops changed. You can do the same thing with Live.

Record ambient sounds into Live Record several tracks of ambient material, varying the length of each track, and loop them. Each track should be long enough that a repeating pattern won't be immediately discernible. But keep loops under a couple of minutes – playing a lot of very long loops can give Live trouble on slower computers. Because the tracks will overlap in different places as the piece plays, record tracks that will mesh harmonically. For example, improvising around a single chord or a pentatonic scale will ensure that the music sounds right, regardless of how the loops line up.

Adjust the start and end points The transition from one end of the loop to the other should be seamless. Adding passages of silence will help, as will adding fades to the beginning and end of a track.

Program panning To add another element of randomness to your piece, consider programming the panning envelope of some of your tracks so the mix constantly changes. Select a clip and click the Waveform button at the bottom of the Live window. Click the Envelopes editor to make it active, and choose Mixer from the Device Chooser pop-up menu. From the Modulate Control Chooser pop-up menu just below that, select Track Pan. Double-click on the Breakpoint Envelope line to create adjustment points, and drag those points up to pan the clip to the left, and down to pan it to the right.

Mix your composition (or don't) You can mix the resulting piece as much or as little as you like. If you want to participate fully in the process, start recording, trigger one loop, trigger another and gradually fade it in, mute and activate tracks, and play with panning and volume. For a more hands-off approach, trigger all your tracks – then sit back and space out as the loops weave a musical mix.

All night long

Many Live users think of the program as a tool for stringing together short bits of audio to create a composition. But a Live clip needn't be just a drumbeat, bass line, or pad. A clip can be an entire song – allowing a DJ to create sets for an entire evening of music.

continues page 98

Sound off

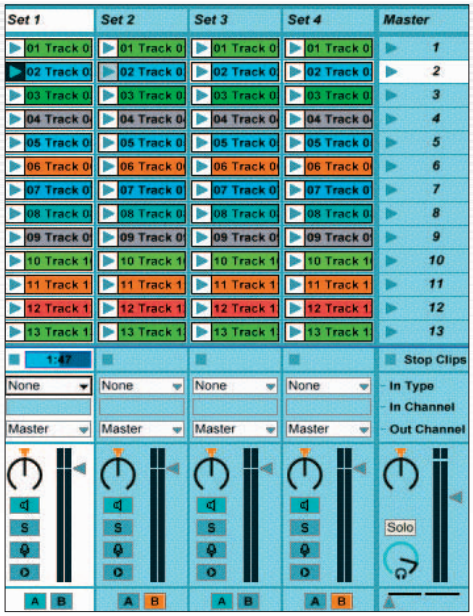
You'll find many sound libraries out there, but at least two companies are billing their collections as tailored especially for Apple's £799 (including VAT) Final Cut Pro 4 and £249 Soundtrack applications (**www.apple.com/uk**).

PowerFX (**www.powerfx.com**) is offering two DVDs of formatted and indexed Apple Loops. The company says you can search the loops on the DVDs via Soundtrack's Media Manager window rather than having to download the material to your hard drive before searching.

The first DVD is Massive FX ($199), a sound-effects library for film and video. Categories include sounds related to people, animals, explosions, alarms, tools, and transportation. The DV Composer's Toolkit ($199) is made up of musical themes for movie backgrounds. The styles include Cinematic Hip Hop, Eastern Textures, Clubstances, and DV Themes and Scores. You'll get individual instrument parts and a Soundtrack .loop file that demonstrates basic arrangements.

AMG (**www.amguk.co.uk**) sells Apple Loops on CD. Dark Side of the Groove is a hip-hop collection of 78 loops. Or you can choose 2Step Ahead, which has 8,000 dance samples (see the Web site for pricing information). Because these are Apple Loops, you can quickly set the key and tempo of these files.

Terri Stone



Smoother sets
Alternating tracks for each song and using the cross-fader to blend between them will make for much more-pleasing results.

To create sets of music, just drag AIFF or WAV song files into Live's clip slots (Live doesn't support the MP3 and AAC formats). To move smoothly from one song to the next, alternate tracks for each song and use Live's cross-fader to fade between one track and another.

For example, put the first song in the first clip slot of Track 1. The second song goes in the first clip slot of Track 2. Song three fits in the second clip slot of Track 1, and the fourth tune goes into clip slot two of Track 2. Select Crossfader from the View menu and choose the A Crossfade Assignment for Track 1 and the B Crossfade Assignment for Track 2. Before the first song begins playing, pan the cross-fade control to the left so you can hear Track 1 when it begins playing. As the song in Track 1 ends, trigger the song in Track 2 and move the cross-fade control all the way to the right to fade out of the first song and into the second. Do the same for each succeeding song.

Lighten the load

Piling on effects and EQ and demanding that Live operate in high-quality mode can overtax your Mac's CPU. When that happens, glitches occur. If Live's CPU Load Meter routinely hovers around 75 per cent or above, try these techniques:

Place common effects in auxiliary sends Effects in individual tracks tax the Mac's processor. Instead of inserting the same reverb effect in each track, place that reverb in a Send track and turn up each track's Send control to access the effect.

Turn off EQ bands If you're using EQ effects, switch off bands you aren't using – Band 2 in the EQ Four effect, for example, if you've made no adjustment to Band 2. To do so, simply click on the corresponding numbered box in the effect (say, box 2 for Band 2) to disable it.

Disable high-quality sound Select Preferences from the Live menu, click the Defaults tab, and disable the Hi Quality option. With Hi Quality off, a less processor-intensive algorithm transposes samples more quickly. The resulting samples may be a bit distorted. If you must have the high-quality algorithm for certain clips, you can enable the Hi Quality option in the Clip View window only for those clips. **MW**

Something from nothing

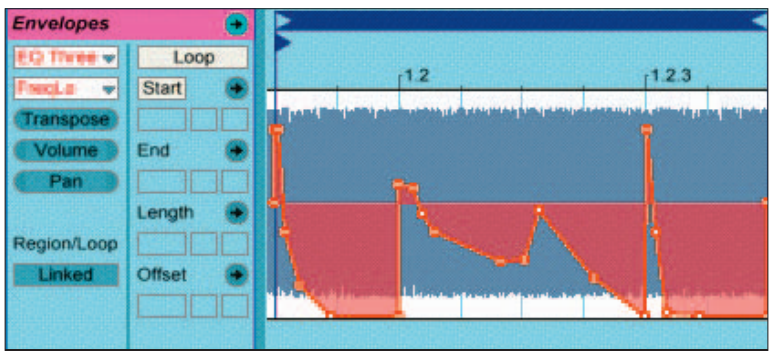
Robert Henke, the musical director of the German electronic-music project Monolake (**www.monolake.de**), has been instrumental in the development of Live. He has generously passed along this technique for creating a percussion track out of white noise in Live 3.0.

Clip and loop Create a clip of white noise and loop a second of it. Most synthesizers can generate such noise.

Add EQ Three You create the sound of the bass drum, snare, and hi-hat by manipulating the gain of the clip's low, mid, and high frequencies with Live 3's EQ Three effect. Click on the Live Effects button and then double-click on the EQ Three effect to add it to the Audio Effect window.

Manipulate gain Switch back to clip view and, from the Envelope Editor, select EQ Three from the first pop-up menu and FreqLo from the pop-up menu below it. Add break points to increase gain at beats 1 and 3 (see "What a kick!"). This gives you your bass drum sound.

Select GainHi from the second pop-up menu and create break points to increase gain on beats 1, 2, 3, and 4. This creates a hi-hat timbre that sounds on each beat.



What a kick!
By carving out sections of white noise and then manipulating their frequency, you can generate a drum kit.

To add a snare track, select GainMid from the second pop-up menu and, once again, create break points to increase gain where you'd like the snare part to fall.

Colour the sound Your clip is now percussive but could use some tonal colour. Begin by adjusting the GainLo, GainMid, and GainHi frequency settings. Dropping the GainHi frequency to around -4.5dB, for example, puts the hi-hat in a range typical of a 1970s drum machine. To make the clip crisper, click the 48dB switch.

Add more effects You could stop here, but to make the track even more interesting add other effects. For example, Henke placed EQ Four (a parametric EQ) before EQ Three and emphasized the middle and high frequencies to bring out the snare and hi-hat sounds. He then added a Chorus effect after EQ Three and engaged the *20 switch to add a didgeridoo quality to the clip.

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• Admin tricks • Kill the Dock • Old-school New Folder shortcut

Mac Help

Handy tips and readers' questions answered. **By Christopher Breen and Rob Griffiths**

Learn keyboard shortcuts

TIP Do you ever feel that there must be a ton of keyboard shortcuts you're not aware of? Fortunately, Apple has finally put together a relatively complete listing of all known keyboard shortcuts. You can find it at **http://docs.info.apple.com/article.html?artnum=75459**.

Of course, OS X 10.3 lets you assign your own keyboard shortcuts, via the Keyboard & Mouse preference pane, so you can take care of missing favourites yourself.

The attachments methods

Q I receive many emails with large attachments, and after saving the attachments elsewhere, I remove them to save space. But unlike every other email application I've used, Jaguar's Mail doesn't provide an option for removing attachments.
Larry Klein

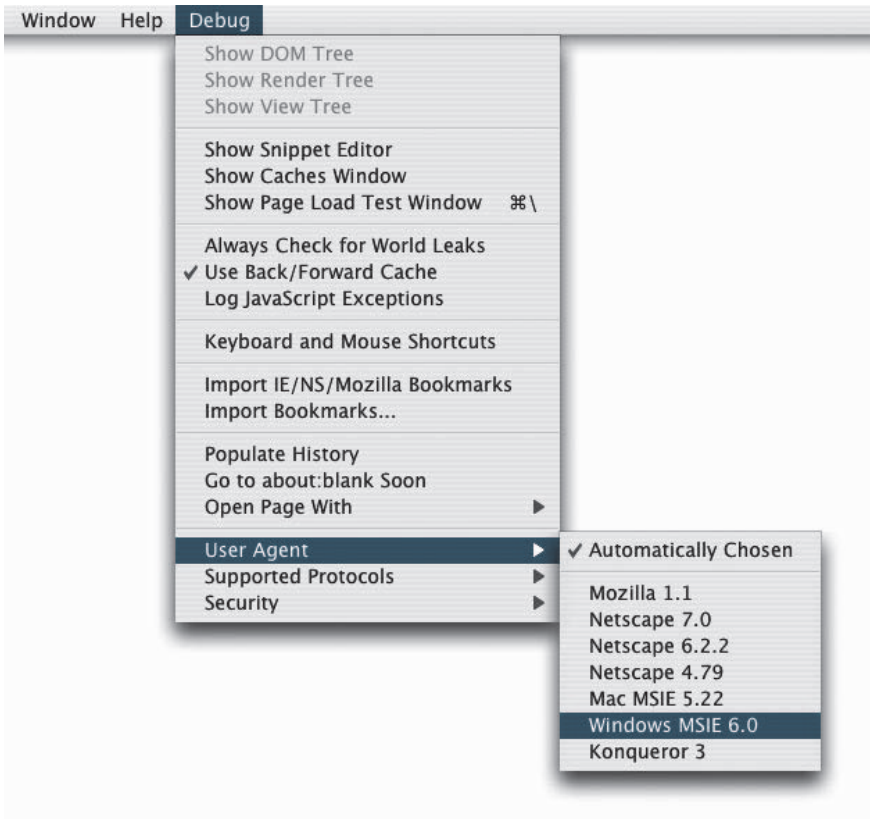
A What can't be done easily (or done at all) in Jaguar may be a cinch in Panther. Nowhere is this more apparent than in Mail – an application that was more than a little limited in Jaguar. Here's proof:

To remove an attachment in the Panther version of Mail, select the message that contains the attachment you want to toss, and choose Remove Attachments from the Message menu. Easy, yes?

Now let's take a look at the Jaguar method. Quit Mail. Navigate to your Library: Mail folder and then to the mailbox folder from which you want to strip the attachments (POP-nobody@mail.nobody.org, for example). Control-click on the mailbox file within that folder (it'll be called something like INBOX.mbox, for instance), and select View Package Contents from the resulting contextual menu.

Double-click on the .mbox file in the window that appears; this opens the file in TextEdit. Scroll through the text file until you see page after page of gibberish preceded by a line of text that reads something like – B_3120297041_53885. This is an attachment. From the message that precedes the gibberish, you should get a hint as to the contents of the attachment.

continues page 180



Enable Safari's Debug menu

TIP During development, programmers use debug menus, which provide an easy way to test compatibility and other issues. Most of the time, these debug menus are removed before the product's final release. But in some cases, they're left in the final release but hidden from normal view. This is the case with Safari, and it takes just one simple Terminal command to enable its Debug menu. Quit Safari, launch Terminal, and type defaults write com.apple.Safari IncludeDebugMenu 1. You can also use the free TinkerTool, (**www.bresink.com/osx/TinkerTool.html**) to enable this menu.

When you relaunch Safari, you'll see the new Debug menu after Safari's Help menu (above). It has many uses, but two are particularly useful. You can use the User Agent menu item to make Web sites believe that you're coming from the latest version of Microsoft Internet Explorer (IE) on Windows.

Though this won't help you with sites that have coded Windows-specific features, it may very well help you with sites that simply check to see whether you're using IE on Windows before they let you in. You may find that sites you previously couldn't view work perfectly fine in Safari with the User Agent set to Windows MSIE 6.0.

The second useful trick is the Keyboard And Mouse Shortcuts menu item. Choose this, and you'll see a Web page listing a ton of shortcuts that will help you work more efficiently in Safari.

You probably won't be interested in the other Debug menu items, but give them a look if you'd like to see some of what goes into developing and testing a new Web browser.

Panther's five-minute administration window

TIP Panther changes Mac OS in many beneficial ways. Schoun Regan of The Mac Trainers (www.themactrainers.com) has passed along information indicating that Panther can also, in the wrong hands, be a dangerous cat.

For the first five minutes you're logged on as an administrator in Panther, you have expanded privileges in the Finder. Specifically, unlike with Jaguar, during those five minutes you're free to throw away any file or folder you like.

This includes the System Folder, the Library folder, or a user folder. If you toss one of these folders, you risk data loss and could, quite possibly, end up with a Mac that has a completely corrupted operating system.

You are also free to change the permissions of folders on your Mac. So if User A logs on, she can change the permissions of the folders in User B's Home folder and have access to documents that, under normal circumstances, are inaccessible to User A.

After those five minutes have elapsed, you're asked for your administrator's password before you're allowed to toss such a file or folder. Enter that password and toss at will. In Jaguar, you're forbidden from performing such actions unless you're logged in as root or you've mucked around in Terminal with the sudo command.

Although some people may contend that this shouldn't be a problem because administrators can be trusted with this kind of power (and shouldn't be administrators if they don't know what they're doing), keep this in mind: anyone who fires up that new iMac loaded with Panther is an administrator. Novices need to learn that they should not, under any circumstances, trash files they don't understand the purpose of.

If you'd like more information on this subject, keep an eye on Regan's Web site, where he explains the situation in greater detail.

Highlight and delete the attachments you don't want (beginning with that – B_3120297041_53885 entry and ending with a similar entry), and save the file. When you next open Mail, you'll find the attachment you removed in TextEdit is likewise excised from Mail.

Font follies

Q I use a Power Mac G4 running Mac OS X 10.2.8, with the HP LaserJet 4050 and Epson Stylus Photo 1280. Most Mail message text prints in 7- or 8pt size. Can I control the printer font size?
Warren Aut

A In Jaguar's Mail you must make changes in the Fonts & Colors preference pane. Although the default message font is 12-point Helvetica, the font doesn't print at that size. To make the printed text larger, select a higher point size for the Message font: 14- or 16pt, for example. Regrettably, doing so also increases the text size of the messages on your monitor.

This isn't a problem in Panther's Mail. Although the newest Mail uses the same default settings in the Fonts & Colors preference pane, messages viewed in 12pt type actually print at that point size.

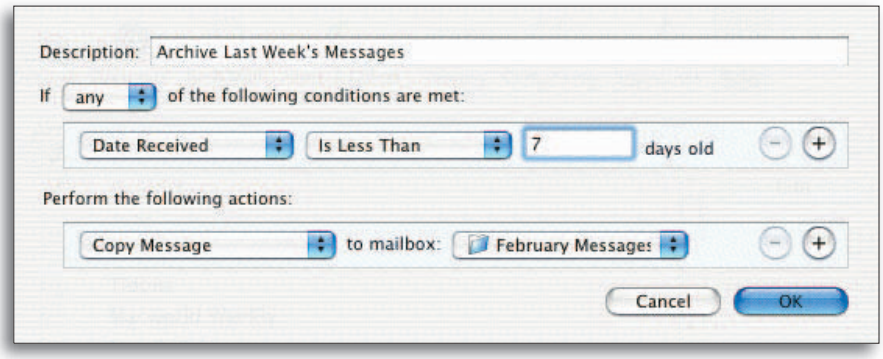
Store sent Mail messages

TIP In the Accounts section of Mail's preferences, you can narrowly specify when the program erases your sent messages – never; after one day, one week, or one month; or when you quit Mail. But here's how you can keep your sent messages for as long as you want.

Quit Mail, and then navigate to Library: Preferences in your user folder. Open com.apple.mail.plist with a text editor such as BBEdit or TextEdit. Now find the section that looks like this:

```
<key>NumberOfDaysToKeepSentMessages</key>
<string>-1</string>
```

The number you'll see on the <string> line will vary based on your settings (-1 means "never delete"). To change the length of time Mail keeps your sent messages, just replace the number with the length of time (in days) – 180 for six months, for example. Save the file, and Mail will keep your sent items for the time period you specified.



The dating game
Panther's Mail lets you create rules based on the date messages were sent or received.

```
<key>MoveDeletedMessagesToTrash</key>
<string>YES</string>
<key>NumberOfDaysToKeepJunk</key>
<string>-1</string>
<key>NumberOfDaysToKeepSentMessages</key>
<string>1</string>
<key>NumberOfDaysToKeepTrash</key>
<string>7</string>
```

A sign of the times

Q In email clients such as Microsoft Outlook Express and Entourage, my signature is at the end of my replies. In Apple's Mail, my signature is at the end of all content, regardless of how many messages and replies there are. Can I place a signature at the end of a reply without having to scroll to the bottom of the message window and cut and paste my signature?
Tim Smith

A In Jaguar's Mail, no. In Panther's Mail, kind of. In Jaguar's Mail, your signature is jammed at the bottom of the message. I suggest that you use the free version of Michael Kamprath's macro application, Keyboard Maestro (**www.keyboardmaestro.com**), to create boilerplate text of your signature, assign that text to a keyboard combination, and use that combination to easily insert the text where you want it to go.

The Signature preference pane in Panther's Mail is more flexible, allowing you to place your signature at the end of the message or above any quoted text. If, like me, you sometimes like to insert your signature at the location of the cursor, keep Keyboard Maestro in mind.

Recover a deleted Stickies note

TIP In most Mac applications, closing a window without saving changes means that the changes are gone for good. In Stickies, closing a note is equivalent to deleting it, so the program asks whether you're sure you want to.

If you accidentally delete a note – and you're still running OS X 10.2 – just press ⌘-Z to undo the close operation. In most cases, your note will pop back into existence. Sadly, this very useful feature has been removed from the 10.3 version of Stickies.

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Tip of the month: how to banish the Dock forever

TIP If you've installed a third-party utility such as PathFinder or DragThing, you may no longer need to use the Dock, and you may want to banish it for good. You've tried force-quitting the Dock, only to find that it automatically restarts. There are a couple of different ways around this problem.

The easiest solution is to reposition the Dock to a location where you're unlikely to activate it – at the top of the screen. While Apple lets you place the Dock on either side or the bottom of your screen, there's no obvious way to move it to the top. You can use TinkerTool, or type the following command in Terminal: defaults write com.apple.dock orientation top.

If you're running 10.3, just type killall Dock to restart the Dock and have your changes take effect. In 10.2, you can use Process Viewer (in Applications: Utilities) to accomplish the same thing. After the Dock restarts, press ⌘-option-D to hide it, and you'll find it's now nearly impossible to activate the Dock – you have to very precisely hold your mouse just below the menu bar in order to activate it.

Although the above solution works, the Dock is still running, taking up some of your valuable RAM and CPU cycles. If you'd like to kill it for good, you'll have to do a bit more work. Keep in mind that the following solution also affects the Dock for all users on your machine.

To quit the Dock for good, you need to make the system unable to restart it after you quit it. If you simply rename or move the Dock app, OS X will have no idea where to find it. Since the Dock is owned by the System, the easiest way to move it is with root privileges in Terminal.

Open Terminal and type:

```
cd /System/Library/CoreServices
```

Press enter, and then type:

```
sudo mv Dock.app /Applications/Dock.app
```

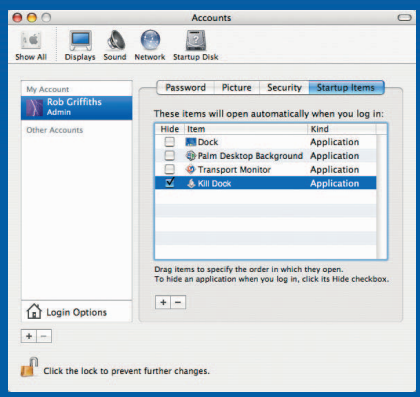
This will move the actual Dock application into the global Applications folder, so the next time you quit the Dock, it will be unable to restart. There's more to do, though: the Dock has one other critical function – it "activates" the desktop the first time it's launched. If you never launch the Dock, you won't have a functional desktop. So the final step is to trick the system into launching the Dock once and then quitting it. To do this, you'll need a very simple AppleScript. Launch Script Editor (in Applications: AppleScript) and enter the following text:

```
tell application "Dock"
    quit
end tell
```

Select File: Save As, give the script a name (in this example, Kill Dock), and save it as an Application.

Now go to System Preferences, open Login Items (in 10.2) or open Accounts and click on the Startup Items tab (in 10.3), and add two new items. As the first item to load at login, add the Dock you moved. As the last item to load at login, add the Kill Dock script you created (see "Start me up").

Now log out and log back in. If you've done everything right, you'll see the Dock appear and then vanish. If you wish to get the Dock back, remove the startup items, and then move Dock.app back to its original location.



Start me up

With a little Unix, a simple AppleScript, and OS X's Startup Items feature, you can rid yourself of the Dock forever.

A worthy Word macro

TIP If, like me, you copy a lot of text from Web pages into Microsoft Word (and are frustrated when the formatting of that text doesn't match that of the host document), you should consider creating a Paste Special macro. It goes like this:

Select Record New Macro from the Macro command's submenu in Word's Tools menu. In the resulting Record Macro window enter a name for your macro (PasteSpecial works for me) and click the Keyboard button. In the Customize Keyboard window that appears, enter a keyboard command for your macro (Control-Option-V, for example) and click OK. Now execute these steps:

Select Paste Special from the Edit menu and, in the resulting Paste Special window, click Unformatted Text and then click OK. This process removes the formatting imposed by the webpage and allows the text to adopt the formatting of the Word document when you paste the text.

Click the Stop button in the Record Macro palette.

From this point forward, when you want to insert properly formatted text copied from a browser, invoke this macro.

All junked up

Q How do I empty Mail's Junk folder? It's filling up and I'm running low on available hard-drive space.

Larry Grossberg

A In Panther, control-click the Junk folder and select Erase Junk Mail from the contextual menu (or select Erase Junk Mail from the Mailbox menu).

There is no such command in Jaguar's Mail, so you must employ either the manual or the automatic method. The manual method entails opening the Junk folder, selecting all the messages in it, and pressing the delete key. To automatically delete mail in the Junk folder, open the Accounts preference pane, select your account, click on the Edit button, and click on the Special Mailboxes tab.

In the Junk portion of the window, choose an option for automatically deleting the contents of the Junk folder: when messages are a day, a week, or a month old, or when you quit Mail.

Dating rules

Q I want to archive my business-related email. Unfortunately, I can't find a way to enter date-based rules in Mail's Rules preferences. I'd hate to return to Microsoft Entourage just because it handled dates better.

George Cancel

A In Jaguar's Mail you can create a meagre date rule by following these steps: Create a new rule in Mail's Rules preference pane. In the If section of the window, select Edit Header List from the first pop-up menu. In the Panel window that appears, enter Date in the Header field, click on Add Header, and then click on OK.

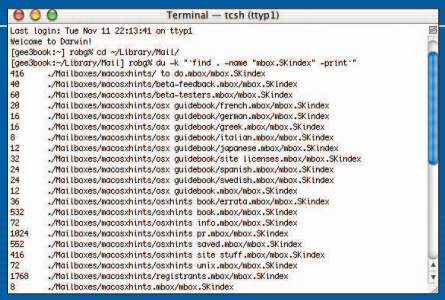
In the Rules section, configure the top row of pop-up menus to read: Date Contains Month (where Month is the abbreviation for the month of messages you want to monkey with – Feb, for instance).

In the Actions portion of the rule, select Transfer Message from the first pop-up menu and then choose a folder for storing your messages. Apply this rule to your messages, and those that meet the date criterion will be moved.

In Panther, Mail includes an expanded set of rules – including Date Sent and Date Received with the Is Less Than and Is Greater Than conditions (see "The dating game, page 180").

continues page 182

Unix tip: Reduce mailbox sizes



TIP You may clean out your Mail folders regularly, deleting old sent and received messages, but Mail's indexing feature can still cause you to waste disk space. Each mail folder is indexed, which allows for fast searches of thousands of email messages. But indexes can bloat over time as they aren't reduced in size when you delete messages from your mailboxes. Periodically allowing Mail to re-create these files will reduce the size of the index files.

Mail hides its index files inside package files, so you can't search for them in the Finder. But you can find and remove them easily in Terminal. In 10.2, launch Terminal and type cd ~/Library/Mail. Press enter to change to the proper directory, then type du -kc "`find . -name "mbox.SKindex" -print`".

Apple renamed the index files in 10.3, so there are two small changes for Panther users. To list all index files, change to the Mail folder (cd ~/Library/Mail), then type % du -hc "`find . -name "content_index" -print`".

Now that you've found the index files, it's time to get rid of them. As with any potentially destructive task, you should back up your Mail folder before performing the next step – which should be completely harmless, but it's always better to be safe than sorry. Just copy your Mail folder to another spot on your system in case you have to restore it. Now type the following in Terminal:

(for 10.2 users)

find . -name "mbox.SKindex" -delete

(for 10.3 users)

find . -name "content_index" -delete

Launch Mail, and as you access each mailbox, the app will rebuild its index file. You can expedite the process by selecting all your mailboxes at once in the Mailboxes pane.

If you quit Mail and rerun the commands to list the size of your index files, you'll be pleasantly surprised at how much space you've saved – if you're an active email user, you could recover 100MB of drive space.

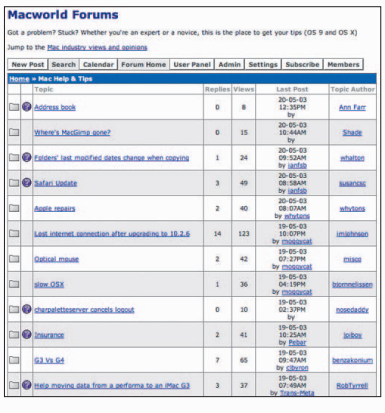
GET QUICK ANSWERS HERE

Macworld contributing editor Christopher Breen answer readers' questions and selects reader-submitted tips for this column.

Tips: Send your tips (include your address and phone number, and mark Q&A in the subject line of the email) to **qanda@macworld.co.uk**. We pay £25 for each tip published here. We regret that we cannot make personal replies.

Questions: If you have a question, the fastest way to an answer is via Macworld's forums: go to **www.macworld.co.uk/forums**. The Mac Help & Tips Forum should be your first port of call. You need to register to use the forums, but it's free.

The forums are where Macworld editors and a host of Mac know-it-alls make it our business to put your Mac back in the pink. Before you post your cry for help, search the forum for similar queries. It's likely that if you're having problems, then someone else has already encountered and maybe even solved them.


Macworld Forums
Got a problem? Stuck? Whether you're an expert or a novice, this is the place to get your tips (OS 9 and OS X)
Jump to the Mac industry views and opinions
New Post | Search | Calendar | Forum Home | User Panel | Admin | Settings | Subscribe | Members
Home » Mac Help & Tips
Topic | Replies | Views | Last Post | Topic Author
Address book 0 8 20-05-03 12:35PM by Ann Farr
Where's MacGimp gone? 0 15 20-05-03 10:44AM by Shade
Folders' last modified dates change when copying 1 24 20-05-03 09:53AM by ianfab whatton
Safari Update 3 49 20-05-03 08:58AM by ianfab susanxsc
Apple repairs 2 40 20-05-03 08:07AM by whytons whytons
Lost internet connection after upgrading to 10.2.6 14 123 19-05-03 10:07PM by macgeist imjohnson
Optical mouse 2 42 19-05-03 07:27PM by macgeist misco
slow OSX 1 36 19-05-03 04:19PM by macgeist bipmmellissen
chargelletteserver cancels logout 0 10 19-05-03 02:37PM by nosedaddy
Insurance 2 41 19-05-03 10:25AM by Peter loibox
G3 Vs G4 7 65 19-05-03 09:47AM by Cheryl benzakonium
Help moving data from a performa to an iMac G3 3 37 19-05-03 07:49AM by Trans-Meta RobTurrell

All about style

TIP On some Web sites, you can't distinguish links from regular text. To better differentiate the links in the Safari Web browser, you can take advantage of Safari's Advanced preference pane to use another style sheet for Safari.

Using TextEdit, create a document that reads:

focus { outline: 1px dotted invert }
a:link { color: #CC0000; text-decoration: none; }
a:link:active { color: #CC0099; outline: gray 1px dotted; }
a:visited { color: #000099; text-decoration: none; }
a:visited:active { color: #006699; outline: gray 1px dotted; }

Save the document in plain-text format as Colors.css, and then choose this style sheet in the Advanced tab of Safari's preferences.

Now links are no longer underlined, unvisited links are red, and they turn violet as you click on them. The visited links are blue and, when you click on them, change to teal.

Judith Epstein

Recover a damaged Word file

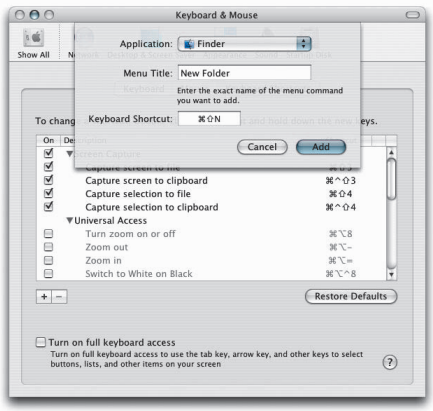
TIP If you've a corrupted .doc file that Microsoft Word says it can't open, try using TextEdit – more often than not, Apple's own text editor can open the iffy document.

Although you may lose some or all of the original document's formatting, you may save hours of hair-tearing.

Safari so good

TIP Apple's Safari Web browser contains many useful keyboard and mouse shortcuts to speed browsing. Here are a few of them:

- ⌘-click a link to open it in a new window. ⌘-Shift-click a link to open it in a new window behind the currently active one.
- Press and hold the back or forward button to see a menu of ten back or forward Web pages from the current location.
- In Bookmarks view, Option-click the New Folder button to put selected items in a new Bookmarks folder.
- Press ⌘-E to use a portion of selected text in the Find command, or ⌘-J to jump to a piece of selected text on a page.


Keyboard & Mouse
Show All
Application: Finder
Menu Title: New Folder
Enter the exact name of the menu command you want to add.
Keyboard Shortcut: ⌘⇧N
Cancel
Add
Capture screen to clipboard ⌘^⇧3
Capture selection to file ⌘⇧4
Capture selection to clipboard ⌘^⇧4
Universal Access
Turn zoom on or off ⌘⌥8
Zoom out ⌘⌥-
Zoom in ⌘⌥=
Switch to White on Black ⌘⌥^8
Restore Defaults
Turn on full keyboard access
Turn on full keyboard access to use the tab key, arrow key, and other keys to select buttons, lists, and other items on your screen

Use ⌘-N for a new folder again!

TIP Do you yearn for OS 9's New Folder shortcut, ⌘-N? Well, yearn no longer – a simple preferences tweak will swap the new Finder's commands for creating a new window and a new folder.

Open System Preferences and go to the Keyboard & Mouse pane. Click the Keyboard Shortcuts tab and create a new shortcut called 'New Folder'. Assign ⌘-Shift-N as the key combination.

Now go to ~/Library/Preferences/com.apple.finder.plist and search for the new shortcut. Duplicate it, then change its name to 'New Finder Window'. Delete the $ from the New Folder key and relaunch the Finder. You'll now be able to create a new folder with ⌘-N, and a new Finder window with ⌘-Shift-N. MW

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Macworld Buyers' Guide

Apple divides its Macs into consumer and professional, and desktop and portable. But just because you fancy an iMac, don't rule out a portable – you might be surprised how much a PowerBook or iBook suits you. And some users may require a "pro" machine even if they class themselves as a "consumer". Decide what it is you want to do, and follow our advice here.

Desktop or portable

If you're often on the move, consider an iBook or PowerBook. You can easily hook each up to a larger monitor and separate mouse on a desk when you're back at base. They're easy to hide away, and with AirPort wireless networking, you can access the Internet up to 150-feet away from your telephone connection.

Apple's portables come loaded with every high-tech port needed, unlike most Windows laptops. The iBook is ultra-small, lightweight and, importantly for students, relatively impact-resistant – and even its 12-inch screen is still sizeable. The pro PowerBook G4 is super-thin and lightweight, and boasts screens from 12 to 17 inches. Its set of ports, including S-Video and Gigabit Ethernet, is impressive – as is its DVD-R SuperDrive.

Performance

Gauging speed by **processor** megahertz ratings is the easy – but incorrect – way to judge performance. You must take into account the amount of memory, the size and speed of the hard disk, graphics card and video memory, and size of cache.

The PowerPC G5 processor is a super-fast, next-generation 64-bit chip from IBM. If blistering performance at the bleeding edge is what you need, a Power Mac G5 is a must.

The PowerPC G4 processor from Motorola drives the Power Mac G4, PowerBook, iMac and eMac. It is specially optimized to speed-up selected programs via AltiVec technology.

Apple now uses two PowerPC processors: the **G4** and **G5**. Both include AltiVec technology that makes specially optimized software run even faster. The full potential of the G5 will be realized when software – and especially the operating system – is optimized for its 64-bit architecture. Currently, nearly all software runs at the G4's 32-bit level. That said, the G5 is still faster – but not enough to disregard the speedy G4, which has plenty of life left in it yet.

Word-processing, spreadsheets, email and Web browsing don't require the very fastest processors, but digital photography, video, and graphics do.

The more memory (**RAM**) you have on your Mac, the faster your applications will run, and you'll be able to keep more programs open at the same time. We recommend you upgrade the memory to *at least* 512MB of RAM.

Fitting extra RAM to a Mac is easy, but get your reseller to fit it if you're nervous. Depending on which model you buy, an extra 256MB can cost as little as £35 online (try **www.crucial.com/uk**), and adding 512MB more will set you back about £100. RAM for portables often costs more.

Cache is a memory subsystem that stores frequently used RAM data for even faster processing access. It's necessary because most computers suffer from performance bottlenecks that slow data down as it travels around the system. The Power Mac G5 features super-fast interconnects, and so requires less cache – the data speeds around fast enough without it.

Most consumers won't get near filling their **hard disk** with their AppleWorks files, digital snaps and Web downloads. Video-editors and iTunes users, however, will require a larger disk. Get as many gigabytes as possible. You can't upgrade the hard drives in the iBook, PowerBook, iMac or eMac, but you can add inexpensive external FireWire disks.

A **video card** connects a Mac to its display. Serious gamers and creative professionals should aim for one of the ATI Radeon or NVidia GeForce4 cards found in Power Macs, with 64MB of video RAM onboard. You can't later upgrade the video card in any of the other systems – but this shouldn't matter for many users.

Features

Apple differentiates its Mac models by type of optical drive: CD or DVD. All Macs come with at least a combination **DVD-ROM/CD-RW** drive that can read and writes CDs, and can play DVDs and DVD movies. The **DVD-R SuperDrive** does all that, and writes DVDs (DVD-R) of iMovies and digital snaps that play in domestic DVD players. The desktop Macs' SuperDrive writes to DVD at 4x-speed; the PowerBook's at 1x-speed.

All Macs come with top-of-the range connectivity features. Networking is at least 10/100BaseT **Ethernet**, with 1,000BaseT for Power Macs and the 15-inch and 17-inch PowerBooks.

All Macs offer at least two USB **ports** for peripherals, and at least one FireWire 400 (400Mbps) for digital video and peripherals. All now boast 480Mbps USB 2.0, except the eMac's older 12Mbps USB 1.1. USB 2.0 is compatible with USB 1.1 devices. The eMac's FireWire port makes the lack of USB 2.0 relatively meaningless. The 15-inch and 17-inch PowerBooks and Power Mac G5 include a FireWire 800 port (800Mbps).

All Macs ship with an internal 56Kbps modem. If you're frequently connected to the the Internet for long periods of time (especially in peak weekday times), you'll probably save call charges by upgrading to a faster **ADSL** broadband connection. You'll need to add an ADSL modem or router, and pay an ISP from around £23 a month for the faster access – but you pay no call charges no matter how long a Mac is connected, and you can use the phone at the same time. Unfortunately, not all areas are ADSL ready – check your phone number at: **www.bt.com/broadband**.

Apple's **AirPort** wireless-networking technology – based on either the IEEE 802.11b or 802.11g industry standards – lets you browse the Internet from anywhere in your home, up to 150 feet away from your phone line or Ethernet connection. AirPort uses radio waves, so it even works through walls. The latest Macs use **AirPort Extreme** (802.11g), boasting 54Mbps speeds, compared to the older AirPort's 11Mbps.

All Apple's new Macs come with the top-quality **iLife** suite of integrated digital-lifestyle software. **iMovie** is a simple but powerful digital-video editor

that works with FireWire. **iTunes** is music 'jukebox' software that can manage MP3 and AAC files, and burn audio CDs. **iPhoto** is a superb program that helps import, edit, organize and share digital photos. DVD-R SuperDrive models come with **iDVD**, which makes creating DVDs a doddle. Some Macs also ship with **AppleWorks** – a suite of easy-to-use business programs. The consumer Macs also ship with reference CDs and games.

Apple charges £69 per year for its online-based iTools, now called **.Mac.** You get an email address, 100MB of free Web space, simple Web-site templates, backup and virus protection.

Apple and its partners have made great efforts to ensure that Macs are largely **compatible with Windows PCs**. USB and FireWire help on connectivity. Emulation programs such as Virtual PC can run Windows software straight from a Mac.

Key applications, such as Microsoft Office, Adobe Photoshop and Macromedia Dreamweaver are all fully compatible with their Windows counterparts. You can swap Word, Excel and PowerPoint documents between the platforms.

Education pricing

Apple offers special pricing for educational users. Institutions such as schools and colleges get the biggest discounts. Teachers and students get about a 9 per cent discount via the online Apple Store – click on Education. **MW**

continues page 184

UPDATED 22/10/03

The main selling points of the **iBook** are its compact, lightweight, impact-resistant case and low price. Its processor has recently been upgraded to a G4, which makes it a very capable OS X machine.

The 256MB RAM is fine for OS X and a couple of programs, but performance will be boosted greatly by adding as much as you can. Via the Apple Store, the maximum 640MB of RAM will cost £120; via an online reseller, as little as £90.

The iBook ships with iMovie, iTunes and iPhoto, as well as the World Book encyclopedia and a couple of games. Word-processing, database, spreadsheet, presentations and graphics tools are provided by AppleWorks.

S-Video and composite video output require a £15 Apple Video Adaptor. Video mirroring to a projector or monitor is via the Apple VGA Display Adaptor.

Pros: Small enough to slip into a backpack, tough enough for schoolkids, the iBook is a more than capable and affordable consumer portable.

Cons: Requires more RAM. Ask for a larger hard-drive in the 12.1-inch model if you're an iTunes or iMovie user. The 14.1-inch model has a larger viewing area, but no more pixels and is half a kilo heavier.

All iBooks:
Video card: 32MB ATI Mobility Radeon 9200. **Resolution:** 1,024-x-768 pixels
Memory: 256MB (Max: 640MB)
Cache: 256K L2
USB 2.0: 2 **FireWire 400:** 1
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level 12.1-inch TFT:
Processor: 800MHz G4
Hard disk: 30GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £849
Star Rating: ★★★★/8.4

■ Entry-level 14.1-inch TFT:
Processor: 933MHz G4
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £999
Star Rating: ★★★★/8.4

■ High-end 14.1-inch TFT:
Processor: 1GHz G4
Hard disk: 60GB
Optical: DVD-ROM/CD-RW
Weight: 2.7kg **Price:** £1,199
Star Rating: ★★★★/7.8

UPDATED 22/10/03

For the consumer/education market, the **eMac** offers a fast G4 processor, large CRT screen (with surprisingly small footprint), multiple optical-drive options, and superb pricing. It measures up well against the iMac. Its built-in 17-inch CRT display offers more screen-space at larger resolutions than the 15-inch LCD iMac. It costs a lot less than the top-end 17-inch iMac. Many will be swayed, however, by the iMac's LCD screen (think long and hard about screen size) and flexibility.

It's fast enough for consumer and educational tasks (Web, email, word-processing, accounts, digital photography, iTunes, etc), and capable of running even pro applications such as Adobe Photoshop.

Add more RAM; at least 512MB is recommended. Via the Apple Store, this will cost up to £120; online, it can be found for £60. A tilt-&-swivel stand for the eMac costs £49.

The eMac ships with the Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), as well as the World Book encyclopedia, and Deimos Rising game. Word-processing, spreadsheet, database, presentations and graphics tools are provided by AppleWorks.

Pros: Top features at attractive prices. Impressive screen resolution.

Cons: Requires more RAM. USB 1.1 rather than much faster USB 2.0, but FireWire makes up for this. Not as flexible as iMac. Limited internal expandability (extra RAM and AirPort Card only), although external alternatives are plentiful.

All eMacs:
Processor: 1GHz G4
Screen: 17-inch CRT (1,280-x-960 pixels)
Video card: 32MB ATI Radeon 7500
Cache: 256K L2
USB 1.1: 3 **FireWire 400:** 2 **PCI:** 0
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level:
Memory: 128MB (Max: 1GB)
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Price: £649
Star Rating: ★★★★/8.8

■ High-end:
Memory: 256MB (Max: 1GB)
Hard disk: 80GB
Optical: DVD-R SuperDrive (4x)
Price: £849
Star Rating: ★★★★★/9.2

UPDATED 08/09/03

The **iMac** boasts a "floating" flat-panel LCD screen that is held by a flexible chrome-pipe neck, allowing you to move it up and down and from side to side to gain a more comfortable viewing experience. LCD screens aren't just kinder to the neck, they're also easier on the eye than CRTs.

While the 15-inch LCD doesn't offer as large a viewing area as the eMac's, the widescreen 17- and 20-inch LCDs are particularly handy for multi-paletted pro applications. Inevitably, the LCD screens make the iMac more expensive than the CRT-based eMac – but offer compelling reasons for the extra outlay. The dome-like base also saves valuable desk space.

The iMacs ship with the great Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), encyclopedia, games, and AppleWorks.

Pros: Nothing beats the iMac on looks, and the adjustable LCD screen is a real improvement on the static CRT – although the eMac's maximum resolution is greater than the 15-inch G4 iMac's.

Cons: Like the eMac, the G4 iMac has limited internal expandability (extra RAM and AirPort Card only), although inexpensive external alternatives are plentiful.

All G4 iMacs: **Ethernet:** 10/100BaseT
USB 2.0: 3 **FireWire 400:** 2 **PCI:** 0
Hard disk: 80GB **AirPort:** 54Mbps
RAM: 256MB (Max: 1GB) **Cache:** 256K L2
Apple Pro Speakers: Included.

■ 15-inch:
Processor: 1GHz G4
Optical: DVD-ROM/CD-RW
Screen: 15-inch LCD (1,024-x-768 pixels)
Video card: 32MB NVidia GeForce4 MX
Price: £999
Star Rating: ★★★★/8.4

■ Widescreen 17-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 17-inch LCD (1,440-x-900 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,449
Star Rating: ★★★★/8.6

■ Widescreen 20-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 20-inch LCD (1,680-x-1,050 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,749
Star Rating: ★★★★/8.7

UPDATED 08/10/03

Despite the arrival of the Power Mac G5, Apple is still selling the minitower **Power Mac G4**. Prices are reasonable, but you don't get the ultimate in performance.

Power users should seriously consider saving for the Power Mac G5, which is far more advanced and potentially a lot more powerful.

The stop-gap Power Mac G4 range offers older specs than those available previously. There's no FireWire 800, USB 2.0, or AirPort Extreme/Bluetooth built in.

But it does offer something that the G5 doesn't: the ability to boot in Mac OS 9. This may interest musicians and designers who are still waiting for OS X-compatible plug-ins. This is the only reason to consider the Power Mac G4 these days.

Pros: The entry-level model is an inexpensive pro-tower that offers OS 9 bootability – still important to some users. The dual-processor machines are well-priced for OS X-fearing power users.

Cons: Uses older specifications than previous G4s; superseded by G5.

All G4 Power Macs:
USB 1.1: 2 **PCI:** 4
FireWire 400: 2
System Bus: 167MHz
Ethernet: 10/100/1000BaseT
AirPort: 11Mbps

■ Entry-level:
Processors: 1 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 1MB L3
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £999
Star Rating: ★★★★/7.4

■ Mid-range:
Processors: 2 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,239
Star Rating: ★★★★/7.5

■ High-end:
Processors: 2 x 1.25GHz G4
Memory: 512MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-R SuperDrive (4x)
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,489
Star Rating: ★★★★/7.5

POWERBOOKS UPDATED 16/09/03

Its lightweight case and speedy processor make the **PowerBook G4** a genuine alternative to the desktop Power Mac. There are two compact 12.1-inch screen models, two 15.2-inch widescreen, and one large 17-inch widescreen. All now feature the lightweight anodized-aluminium case.

G4 processor speeds start at 1GHz – easily fast enough for pro applications, and the video cards boast up to 64MB of video RAM. Each size has a slot-loading DVD-R SuperDrive model – although this runs slower than that in desktop models.

If you fancy the iBook for its compact size and light weight, but demand more power, the **12-inch** PowerBook is a great choice if you're frequently on the move. Digital video-out is via a mini-DVI port. Connect to an external Apple LCD display with a £75 DVI-to-ADC adaptor. It lacks fastest Gigabit Ethernet – although this won't bother many.

Mobile computers are all about compromise (size against performance and features), and the middle model will appeal to those who can take a little extra weight for the extra screen space. Now that the **15-inch** model is in the aluminium case, with AirPort Extreme and FireWire 800, it is the pick of the range.

The **17-inch** PowerBook boasts the largest laptop screen on earth, and will appeal to video or music pros, who regularly need to take their computers on the road. Size isn't really an issue when travelling, but frequent laptop luggers will be put off by its weight – although it's reasonable for such a large-screen laptop.

All models support dual-screen display using external monitors.
Pros: Lightweight, slim and stylish, there's a PowerBook G4 model for everyone: from compact to giant; USB 2.0 on all models; 1.25GHz 15-inch and 17-inch include backlit keyboard.
Cons: 12-inch has no FireWire 800; 17-inch shows its size by weight.

Both 12.1-inch PowerBooks:
Processor: 1GHz G4 **AirPort:** 54Mbps
Memory: 256MB (Max: 1.25GB)
Cache: 512K L2 **Hard disk:** 40GB
Video card: 32MB NVidia GeForceFX 5200
Resolution: 1,024-x-768 pixels
USB 2: 2 **FireWire 400:** 1 **Weight:** 2.1kg
Ethernet: 10/100BaseT **S-Video:** 1

■ DVD-ROM/CD-RW **Price:** £1,299
Star Rating: ★★★★/8.4

■ DVD-R SuperDrive (1x) **Price:** £1,449
Star Rating: ★★★★/8.6

Both 15.2-inch PowerBooks:
Cache: 512K L2 **Weight:** 2.49kg
Resolution: 1,280-x-854 **AirPort:** 54Mbps
USB 2.0: 2 **FireWire 400:** 1
PC Card: 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600

■ DVD-ROM/CD-RW 15.2-inch:
Processor: 1GHz G4 **Hard disk:** 60GB
Memory: 256MB (Max: 2GB)
Price: £1,599 **Star Rating:** ★★★★★/9.0

■ DVD-R SuperDrive (1x) 15.2-inch:
Processor: 1.25GHz G4 **Hard disk:** 80GB
Memory: 512GB (Max: 2GB)
Price: £1,999
Star Rating: ★★★★★/9.0

■ DVD-R SuperDrive 17-inch:
Processor: 1.33GHz G4
AirPort: 54Mbps
Memory: 512MB (Max: 1GB) **PC Card:** 1
Cache: 512K L2 **Hard disk:** 80GB
USB 2: 2 **FireWire 400:** 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600
Resolution: 1,440-x-900 pixels
Optical: DVD-R SuperDrive (1x)
Weight: 3.08kg
Price: £2,399
Star Rating: ★★★★★/9.0

UPDATED 18/11/03

The **Power Mac G5** is the spearhead of Apple's attack on the PC workstation market – packed with next-generation technologies, and running IBM's extremely powerful 64-bit G5 processor.

Its phenomenal power isn't just down to the processor. Performance bottlenecks are eliminated by an industry-best frontside bus running at up to 1GHz, and HyperTransport interconnects.

Hard drives are Serial ATA, supporting 1.5Gbps throughput per channel.

All this speed generates a lot of heat, and Apple has created a smart cooling system with up to nine fans and four thermal zones. As fans can slow down depending on the operation in progress, sound levels are reduced, making the Power Mac G5 much quieter than the G4. The addition of USB 2.0 ports means that the Power Mac G5 can support many peripherals previously pegged back at slower USB 1.1 speeds.

The top Power Macs feature two G5 chips – making it the perfect machine for multiprocessor-optimized applications such as Adobe Photoshop and Final Cut.

The ability to add up to 8GB of super-fast DDR RAM is another plus for OS X users – particularly for creative professionals.

As a pro system, it ships with Gigabit Ethernet for faster networking – although you'll have to upgrade your LAN's switches to get all the benefits.

The case is well designed for easy access and quick upgradability. It's even easier to fit RAM and drives than in the Power Mac G4 – you don't need any tools; everything slides and clicks into place with ease.

The Power Mac ships with the Apple iLife programs (iMovie, iTunes, iPhoto; and iDVD).
Pros: Super-fast; next-generation technologies; up to 8GB RAM; DVD-R SuperDrive; digital audio; quiet.
Cons: No good if you want to boot in Mac OS 9, but Classic works fine.

All G5 Power Macs: **USB 2.0:** 2 **FireWire 400:** 2 **FireWire 800:** 1 **AGP 8X Pro:** 1
Ethernet: 10/100/1000BaseT **AirPort:** 54Mbps

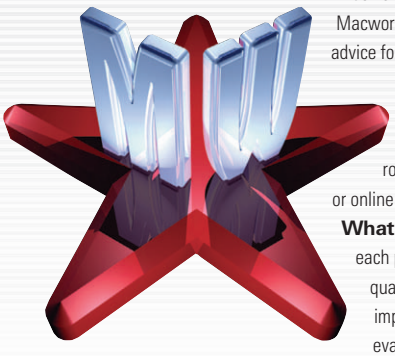
■ Entry-level:
Processors: 1 x 1.6GHz G5
Frontside Bus: 800MHz
Memory: 256MB DDR (Max: 4GB)
Hard disk: 80GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI: 3 x 33MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,399
Star Rating: ★★★★/8.5

■ Mid-range:
Processors: 2 x 1.8GHz G5
Frontside Bus: 900MHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,899
Star Rating: ★★★★★/9.0

■ High-end:
Processors: 2 x 2GHz G5
Frontside Bus: 1GHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB ATI Radeon 9600 Pro
Price: £2,299
Star Rating: ★★★★★/9.0

Macworld Star Ratings

Recommendations you can trust

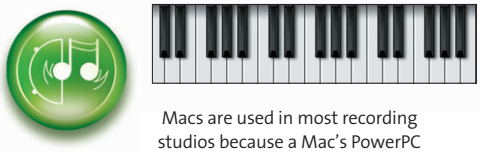


Macworld's Star Ratings section lets you compare Macintosh products by providing summaries of Macworld's authoritative hardware product reviews from the past year. It includes detailed buying advice for each product category and a fuller description of our Editors' Choice winners. Alongside the list of Macworld Star Ratings are handy tips and further product buying advice.

Star Ratings for Mac systems are published in the Mac Systems Guide – see earlier. Subscribers can go to **www.macworld.co.uk** to explore our comparative feature round-ups and reviews for both software and hardware. Listings tell you which back-issue or online archive to search.

What the scores mean The number of stars indicates the product's level of quality; each product also gets a numeric score that provides a more exact assessment of the product's quality within that level. We evaluate seven factors to derive the star rating: feature set; design implementation; performance; reliability; ease of use; innovation; and value. We take these evaluations, weight their importance for each product class, and calculate the final score.

REAL PRODUCTS	REAL RATINGS	
★★★★★	9.0 to 10.0	Outstanding
★★★★	7.0 to 8.9	Very good
★★★	5.0 to 6.9	Good
★★	3.0 to 4.9	Flawed
★	0.0 to 2.9	Unacceptable



Macs are used in most recording studios because a Mac's PowerPC processor is more efficient than Intel chips running at the same speed, so it can handle extra channels and signal processing, or both simultaneously. While **digital-audio** plays digitized recordings, making demands of your disk-drive and system bus, **MIDI** (Musical Instrument Digital Interface) behaves more like a word processor – with file sizes to match.

If you're still linking Macs with 10BaseT **Ethernet**, move to the faster 100BaseT, available on all current Macs. The latest Power Macs and PowerBooks come with 1000BaseT (Gigabit) Ethernet, which is even faster than 100BaseT.

Apple's **AirPort Extreme** is a fast wireless-networking technology. Add a £59 (2.0) or £79 (Extreme) card, and you can network and browse the Web cablelessly up to 150ft away from your £149 or £189 Base Station. AirPort works with all current Macs, and is now a viable alternative to wire-based networking. If you can, upgrade your Internet connection to **broadband**, via ADSL, cable or satellite. You'll need either an ADSL router (recommended) or a special modem. Add extra peripherals Macs with a **USB** or **FireWire hub**.

It's a snap to load digital photos into a Mac. With **iPhoto**, digital photography moves to an even higher level. **Resolution** of digital cameras is measured in horizontal and vertical pixels: 1,024-x-768, etc. High-resolution images show a greater level of detail – and can be more readily enlarged – than images with fewer pixels. Manufacturers also list resolution in terms of the total number of pixels. For example, 1,280 horizontal by 960 vertical pixels create a total of 1.2 million pixels (1,280-x-960 = 1.2 megapixels.

Any camera with an aggregate resolution of over 1 million pixels is referred to as a **megapixel** camera. If you plan to use images on the Web, you can get by

AUDIO / MUSIC

★★★★/7.0	**AV320**, Archos, *01264 366 022*, £560 (inc. VAT). Audio and video in your hand. Outputs to TV, but not too easy to use.	*Nov 2003*
★★★★/8.5	**iPod 10GB**, Apple, £249 (inc. VAT). Apple's MP3 super-slim player holds 2,500 tunes with solid-state controls.	*Nov 2003*
★★★★★/9.0	**iPod 20GB**, Apple, £299 (inc. VAT). Super-slim player holds 5,000 tunes, has solid-state controls, and dock.	*Nov 2003*
★★★★★/9.2	**iPod 40GB**, Apple, £399 (inc. VAT). Super-slim player holds 10,000 tunes, has solid-state controls, and dock.	*Nov 2003*
★★★★/8.8	**JBL Creature**, Harman @ Computers Unlimited, *020 8200 8282*, £99. Speakers look great, but the sound quality could be better.	*March 2003*
★★★★★/9.2	**Mbox for OS X**, Digidesign, *01753 653 322*, £379. Records, edits and mixes multiple tracks, but needs free USB port on Mac.	*March 2003*
★★★★/7.7	**Podio Pro**, MacAlly, *01392 426 473*, £58.69 (inc. VAT). White iPod headphones with noise-cancelling feature, and flight adaptor.	*Oct 2003*
★★★★★/9.0	**PowerWave**, Griffin @ AM Micro, *01392 426 473*, £99 (inc. VAT). Excellent-quality audio and includes software.	*March 2003*
★★★★/8.7	**SliMP3**, Slim Devices @ Multitask Computing, *01322 380 023*, £209 (inc VAT). Stylish wireless functionality, MP3 streamer.	*March 2003*
★★★/6.6	**Voice Recorder**, Belkin, *00800 2235 5460*, £39 (inc. VAT). Nifty microphone for dock-enabled iPods.	*Expo 2003*

CONNECTIVITY / NETWORKING

Servers, routers, software, remote access, SCSI cards, emulators, hubs, adaptors…

★★★★/8.8	**AMX-64**, ADSL Nation, *01865 761 114*, £99 (inc VAT). Affordable 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/8.5	**Cayman 3341**, Netopia, *020 8358 5858*, £99 (inc VAT). Affordable 2-port ADSL router that's easy to set-up.	*Sept 2003*
★★★★/8.8	**DG814**, Netgear, *020 7216 0014*, £95 (inc VAT). 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/7.6	**extendAIR Direct**, Dr Bott; Channel Dynamics, *0870 607 0540*, £139 (inc VAT). Antenna to extend AirPort's range.	*Jan 2004*
★★★★/8.5	**GSW-8**, Corega, *08705 168 626*, £115 (inc VAT). 8-port Gigabit Ethernet switch.	*Sept 2003*
★★★★/7.5	**SpeedTouch 510**, *01295 222 170*, £163 (inc VAT). Stylish and secure ADSL router, let down by hard-to-follow set up.	*Expo 2002*
★★★★/8.8	**SpeedTouch 330**, Alcatel, *01295 222 170*, £79 (inc VAT). Stylish, compact ADSL modem that's Mac OS X-friendly.	*Expo 2002*
★★★★/8.7	**StingRay**, Hermstedt, *020 8200 8282*, from £2,895 (ex VAT). Cheap to run, secure and easy-to-use file-transfer solution.	*Feb 2003*

DIGITAL CAMERAS / CAMCORDERS / VIDEO-CON

Consumer and professional; still and video; Apple's iPhoto. All prices include VAT.

Digital-still cameras

★★★★/8.1	**007 JB1**, Digital Dream, *01304 248 200*, £69. Zippo-sized 0.3-megapixel gadget-camera – basic quality, but tons of fun.	*Expo 2003*
★★★★★/9.2	**Camedia C-5060**, Olympus, *020 7253 2772*, £599. Rugged 5.1-megapixel unit that delivers outstanding images.	*Feb 2004*
★★★/6.9	**C-740 Ultra Zoom**, Olympus, *020 7253 2772*, £299. 3.2-megapixel unit offering excellent images, but poor documentation.	*Dec 2003*
★★★★/7.0	**Caplio G4/Wide**, Ricoh, *01782 753 300*, £199. A 3.2-megapixel model offering fast shutter response and a great lens.	*Jan 2004*
★★★/6.8	**Cyber-shot DSC-P8**, Sony, *08705 111 999*, £350. Compact 3.2-megapixel camera with movie mode but no manual controls.	*Aug 2003*
★★★/6.8	**Cyber-shot DSC-P72**, Sony, *08705 111 999*, £300. Same as DSC-P8 but lacking controls over sharpness and saturation.	*Aug 2003*
★★★/6.7	**Cyber-shot DSC-V1**, Sony, *08705 111 999*, £546. Well-designed 5-megapixel model; delivers noisy shots, though.	*Dec 2003*
★★★/6.5	**Dimage Xt**, Minolta, *01908 200 400*, £249. Slimline 3.2-megapixel unit with easy-to-use movie mode.	*Dec 2003*
★★★★/8.7	**EOS 10D**, Canon, *08705 143 723*, Body-only, £1,499. Great digital SLR with well-balanced mix of features, comfort and quality.	*Oct 2003*
★★★★/8.6	**EOS 300D**, Canon, *08705 143 723*, £999. True SLR with removable lenses and low price, but no rear-mounted control-wheel.	*Expo 2003*
★★★★/8.6	**FinePix A303** Fujifilm, *020 7586 1477*, £449. SuperCCD offers an effective resolution of six megapixels.	*Sept 2003*
★★★★/7.8	**FinePix F410 Zoom** Fujifilm, *020 7586 1477*, £299. Decent 3-megapixel entry-level with 3x zoom.	*Sept 2003*
★★★★/8.5	**FinePix F601 Zoom** Fujifilm, *020 7586 1477*, £499. SuperCCD offers an effective resolution of six megapixels; funky look.	*Sept 2003*
★★★★/7.7	**IXUS II**, Canon, *08705 143 723*, £369. Nicely designed 3.2-megapixel model with movie mode but no red-eye.	*Aug 2003*
★★★/6.6	**Lumix DMC-FZ1**, Panasonic, *08705 357 357*, £329. Stunningly fast 2-megapixel unit that unfortunately lacks full manual controls.	*Dec 2003*
★★★★/7.5	**Mju 300**, Olympus, *020 7253 2772*, £299. Responsive 3.2mp model with reliable picure quality, but a lack of manual controls.	*Jan 2004*
★★★★/8.5	**PowerShot A80**, Canon, *08705 143 723*, £349. Responsive 4-megapixel camera that boasts spanking image-quality.	*Expo 2003*
★★★★/8.0	**PowerShot G5**, Canon, *08705 143 723*, £628. An excellent 5-megapixel camera with add-on lens and flash support.	*Dec 2003*
★★★★/8.0	**PowerShot S50**, Canon, *08705 143 723*, £549. A 5-megapixel model with full manual controls and a movie mode.	*Aug 2003*
★★★★/8.6	**Photosmart 735**, HP, *08705 47 47 47*, £199. A cheap-as-chips, no-nonsense 3.2-megapixel camera with 3x optical zoom.	*Nov 2003*
★★★★/8.2	**Revio KD-420Z**, Konica Minolta, *020 8751 6121*, £249. Blindingly fast and rugged 4-megapixel model with great image quality.	*Jan 2004*

Consumer digital camcorders

★★★★/8.0	**DM-MV5i,** Canon, *0800 616 8883*, £850. This camcorder has good specs, but is £50-£100 more than equally specced models.	*March 2003*
★★★★/8.5	**DM-MX2i,** Canon, *0800 616 8883*, £1,149. With optical stabilization, this camcorder delivers crisp pictures – at a price.	*March 2003*
★★★★/7.5	**DS60 DV Camcorder**, Panasonic, *08705 357 357,* £449. Budget model offering decent quality for the price.	*Aug 2003*
★★★★★/9.0	**DVX100**, Panasonic Broadcast, *08700 100 464,* £3,195. Film-style aesthetics without the Hollywood budget.	*Nov 2003*
★★★★/8.0	**GR-D70**, JVC, *0870 300 5000,* £600. Low-price palmcorder that offers DV-in and -out, and excellent image-quality.	*Aug 2003*
★★★★/8.5	**GR-DV700**, JVC, *0870 300 5000,* £750. Midrange, easy-to-use 1.33-megapixel camcorder. Excellent for the price.	*Aug 2003*
★★★/6.5	**GR-PD1**, JVC, *0870 330 5000*, £2,500. High Definition camcorder with 16:9 mode and MPEG-2 recording. Little Mac support.	*Expo 2003*
★★★★/8.6	**iSight**, Apple, £119. Idiot-proof, portable webcam that ties in well with iChat AV.	*Sept 2003*
★★★★/8.7	**MVX150i,** Canon, *08705 143 723*, £899. This camcorder offers great image quality, 16x zoom and impressive features.	*Sept 2003*
★★★★/8.3	**NV-GS5**, Panasonic, *0870 357 357,* £850. With a decent resolution and variable-speed zoom, the GS5 only lacks a stills mode.	*March 2003*
★★★★/8.6	**NV-GX7**, Panasonic, *0870 357 357,* £750. Excellent image quality, a stills mode and night shooting.	*March 2003*
★★★★/8.7	**DCR-PC8**, Sony, *020 7365 2947*, £549. Great little camcorder that's a joy to use; requires FireWire cable.	*Sept 2003*
★★★★/8.3	**VP-D130**, Samsung, *0800 521 652,* £700. This cheap camcorder is for those who want to keep it simple.	*March 2003*

FireWire webcams

★★★★/7.7	**Fire-i,** Unibrain; Channel Dynamics, *0870 607 0540*, £92. Great in low light, compact, but mediocre quality on colours and pictres.	*Jan 2004*
★★★★/7.7	**iBot Standard,** Orange Micro; Channel Dynamics, *0870 607 0540*, £88. Great picture quality, but bulky and poor software.	*Jan 2004*
★★★★/8.6	**iSight,** Apple, £119. Excellent picture quality; built-in mic; great design, but poor in low-light conditions. No additional software.	*Jan 2004*
★★★★/8.3	**Pyro 1394 WebCam,** ADS; Datavision UK, *01525 406 886*, £89. Great picture quality and software, but a little bulky.	*Jan 2004*

DISPLAY

Monitors, projectors and video cards.

17-inch flat-panel LCD displays

★★★★/8.8	**17-inch Studio Display**. Apple, *0800 039 1010*, £549 (inc VAT). Apple's 1,280-x-1,024-pixel screen is big as well as beautiful.	*July 2002*
★★★★/7.7	**C783,** Microtek, *01372 844 880*, £553. Good-value if-dull flat-panel offering built-in speakers.	*July 2002*
★★★★★/8.8	**Gallery 1740,** Formac, *020 8533 4040*, from £528 (inc VAT). Great-looking 17.4-inch 1,280-x-1,024-pixel ADC monitor.	*July 2002*
★★★★/7.7	**SyncMaster 171S**, Samsung, *0800 521 652*, £489. Compact, lightweight LCD screen that's nicely styled.	*July 2002*

18-inch flat-panel LCD displays

★★★★/7.7	**FlexScan L685-EX,** Eizo, *01483 719 500*, £1,089. Compact 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**MultiSync LCD 1880SX,** NEC, *0801 201 160*, £959. Compact, attractive 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**photon18blue**, LaCie, *020 7872 8000*, £899. 18-inch 1,280-x-1,024-pixel LCD screen boasting great image quality.	*July 2002*

19-22-inch flat-panel LCD displays

★★★★★/9.2	**Cinema Display HD**, Apple, *0800 039 1010*, £1,699 (inc VAT). **Editors' Choice: High-end flat-panel displays** Excellent high-definition 1,920-x-1,200-pixel screen that's suitable for use with high-end digital-video editing.	*March 2003*
★★★★★/9.0	**Cinema Display**, Apple, *0800 039 1010*, £1,009 (inc VAT). Apple's 20-inch screen has a 1,680-x-1,050 wide-screen resolution.	*March 2003*
★★★★/8.5	**FlexScan L767,** Eizo, *01483 719 500*, £734. Affordable 19-inch LCD that comes with a digital interface.	*June 2003*
★★★★/8.3	**FlexScan L985-EX,** Eizo, *01483 719 500*, £1,561. Monster 21-3-inch LCD that's pricey, but is of undeniable quality.	*June 2003*
★★★★/8.5	**MultiSync LCD1920NX,** NEC, *0801 201 160*, £750. A good-value 19-inch LCD that offers a digital interface.	*June 2003*
★★★★/8.3	**MultiSync LCD2080UX,** NEC, *0801 201 160*, £1,048. 20.1-inch LCD that's well-priced, and includes an auto-adjust feature.	*June 2003*
★★★★/8.7	**P922E,** CTX, *01923 810 800*, £545 (inc. VAT). Inexpensive 19-inch LCD with USB 2.0 hub.	*Oct 2003*
★★★★/8.6	**Photon20Vision**, LaCie, *020 7872 8000*, £1,404. Quality 20.1-inch flat panel with calibration option, desk clamp and hood.	*June 2003*
★★★★/8.7	**S962A LCD Monitor,** CTX, *01923 810 800*, £492 (inc VAT). Affordable 19-inch flat-panel display.	*Jan 2004*

21-inch+ CRT displays

★★★★★/9.0	**Diamond Pro 2070SB,** Mitsubishi, *020 7202 6300*, £499. **Editors' Choice: 21-inch+ CRT displays** This monitor offers top features at a great price. It can display at 2,048-x-1,536-pixels at 85Hz.	*Jan 2003*
★★★★/8.7	**electron22blue III**, LaCie, *020 7872 8000*, £699. Aperture-grille offering great image quality, but the competition is catching up.	*Jan 2003*
★★★★/7.0	**FlexScan T966,** Eizo, *01483 719 500*, £659. 21-inch aperture-grille at a reasonable price.	*Jan 2003*
★★★★/8.3	**Multiscan E520,** Sony, *08705 111 999*, £769. This is a high-quality monitor, but you pay extra for the Sony brandname.	*Jan 2003*
★★★★/7.0	**Reference Calibrator V,** Barco@Typemaker, *0221 604 1234*, £3,250. Pricey, but colour-accurate display is losing edge on rivals.	*Jan 2003*
★★★★/8.3	**SM1200NF**, Samsung, *0800 521 652*, £489. The screen looks dated, but it's feature rich with a decent resolution..	*Jan 2003*
★★★★/7.7	**VisionMaster Pro 513,** Iiyama, *01438 745 482*, £369. A great choice if you want cheap and cheerful.	*Jan 2003*

Projectors

★★★★/7.6	**LiteShow**, InFocus, *0800 028 6470*, £349. AirPort connection to the LP120 projector.	*Dec 2003*
★★★★★/9.1	**LP120**, InFocus, *0800 028 6470*, £1,999. Tiny, fully featured 1,100 ANSI lumen projector – the best there is.	*Dec 2003*

Display/TV hardware

★★★★/8.5	**Alchemy TV**, Miglia @ AM Micro, *01392 426 473*. TV tuner that can transfer VHS tapes to a Mac.	*Jan 2004*
★★★★/8.0	**CinemaLift**, LCDArms, *www.lcdarms.com*, £175. Well-designed flexible arm for raising a Cinema Display up to eye level.	*Jan 2004*
★★★★/8.2	**Eye TV**, El Gato @ CU, *020 8358 5858*. Easy-to-set-up method of watching television on your Mac.	*May 2003*

INPUT

Mice, trackballs, digital tablets… All prices include VAT.

★★★★/8.2	**Graphire3 Studio XL**, Wacom, *Computers Unlimited, 020 8358 5858*, £179. A5 tablet with stylus and scroll-wheel mouse.	*Dec 2003*
★★★★/8.6	**IrisPen Express**, Iris; Widget UK; *0800 138 1639*, £99. Pen-sized scanner that delivers immediate, decent-quality results.	*Feb 2004*
★★★★/7.3	**Wireless Keyboard**, Apple, *0800 039 1010*, £59. Bluetooth keyboard complete with 128-bit encryption.	*Dec 2003*
★★★★/8.8	**Wireless Intellimouse Explorer 2.0**, Microsoft, *0870 207 7377*, £55. Five-button, side-scrolling optical mouse.	*Jan 2004*

with a low-res camera. If you want to use the images in print at anything greater than postage-stamp size, at least a two-megapixel camera is a must. Look for optical resolution; ignore interpolated resolution.

Select a camera that offers the option of switching between high-res/fewer shots and lower-res/many shots. SmartMedia **storage** cards are cheaper but flimsier, and offer less storage than CompactFlash cards. Sony cameras use MemorySticks. Other formats include SecureDigital, Multimedia, and the tiny XD Picture card. Digital cameras tend to be **battery** hogs, so rechargeable batteries are a must. NiCad batteries are cheaper than NiMH batteries, but the latter last longer between charges.

Those who don't own a **digital-video camcorder** are missing out on one of the best reasons to own a Mac. All of Apple's Mac models, even the least-expensive iMac, have built-in FireWire ports and iMovie software, making the creation of professional-looking videos for business, home, and school projects very easy.

Most camcorders use MiniDV tapes, tiny cassettes that store 60 minutes of high-quality digital video in standard-play mode or 90 minutes in long-play mode. Sony's MicroMV digital-video format is not yet supported. Once you record video, you can upload it to a Mac via a **FireWire** cable and edit it using either Apple's **iMovie** or a higher-end program such as Apple's **Final Cut Pro/Express**. Add effects with **Adobe After Effects**.

The DV format – used by DV, MiniDV, and Digital 8 cassettes – stores video at more than twice the resolution of standard VHS or 8mm tapes, and it stores 25 per cent more information than S-VHS or Hi8 tapes. Colour fidelity and noise immunity are also markedly better on DV tapes than on analogue tapes, resulting in breathtaking video quality. And because the recorded video is digital, you can upload it to your Mac or copy it to another DV tape without any loss of quality.

Aim for a FireWire digital camcorder with both **DV-In** and **-Out**, as this means you can transfer your edited movie from your Mac back to MiniDV tape.

The first decision you'll need to make is whether to get a flat-panel display, based on liquid crystal display (**LCD**) technology, or a cathode-ray tube (**CRT**) monitor.

CRTs are cheaper and offer higher colour vibrancy and accuracy than LCDs. If low price is your biggest requirement, or if you're looking for a display for publishing or design work, go with a CRT.

An LCD display's advantage is unparalleled sharpness and ultra-thin profile. If space considerations, or a cutting-edge look, top your list of concerns, and you can afford it, today's flat-panel displays are worth a serious look. With a flicker-free screen and tiny footprint, an LCD is easy on the eyes in more than one sense.

Today's monitors offer one or more of the following connections: VGA, DVI, or ADC. A screen hooked-up to a digital DVI or ADC connector offers sharper, clearer images than those connected via an analogue VGA connector. Analogue LCDs can display "noise", a by-product of converting the video signal from digital to analogue and then back again. The ADC (Apple Display Connector) port combines a DVI signal with power and USB. The single cable leaves your desk relatively clutter free, but ADC is available only on cards shipping in Power Mac G4s and Cubes released after August 2000.

Except for the Apple displays, most monitors can plug directly into an analogue VGA connector, making them compatible with current and older desktops and laptops. Some models offer both analogue and digital inputs. These are the most compatible, as they can plug

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into DVI or standard VGA connectors and, with a third-party adaptor, into ADC ports. The Apple displays require the ADC port available on only recent G4 and G5 desktops.

When comparing the image size of displays, be sure to check the **viewable image size**, not the claimed size of the CRT or flat-panel. The **resolution** of a monitor is expressed in horizontal and vertical pixel dimensions, and range from 640-x-480 pixels to 1,600-x-1,200 pixels and beyond. The higher the resolution, the more you will be able to see on-screen. The more inches, the larger the pixels.

A CRT's **dot pitch** measures how close adjacent phosphor dots (or stripes on aperture-grille CRTs) are to each other. In general, the smaller the dot pitch, the sharper (and more expensive) the display will be.

On CRT monitors, a low **refresh rate** – how many times your Mac sends a fresh copy of the screen image to your display – implies flicker, a major cause of eyestrain. The higher the refresh rate, the better. LCDs don't suffer from flicker at all.

High-end monitors may also come with **calibration** software and devices for ensuring accurate colour for publishing and design applications.

Input devices come in many shapes and sizes. Go for an **optical mouse**, which are less prone to wear-&-tear than the old-style mice. Apple's mouse is good, but lacks extra buttons and a scroll wheel – fantastic for zipping through documents and Web pages.

Graphics tablets are now very advanced and often come with pressure-sensitive pens, which enable more control when using natural-media graphics software like Painter. The harder you press, the thicker the line. They take some getting used to, but many artists swear by them – not at their mice!

The range of printers available is huge: fast network printers, for business, to slower-but-cheap colour printers for home.

Decide what you need from your printer, look at your budget and, most importantly, look at the **output** of the printer. The only way to avoid disappointment is to have a dealer print out a page in front of you. Remember that the test prints shown in shops are often done on expensive glossy paper.

Speed is also an issue. At home, waiting 15 minutes for a colour page to print may be acceptable. In the office, however, time is money – meaning that faster printers are needed.

Home/small office use: A4 Inkjets are the cheapest printers to buy, and can output near-photographic quality prints – great with digital cameras. If you mainly run-out black-&-white prints of letters and so forth, consider a mono laser printer (which cost from around £250).

Business use: Fast, networkable mono lasers cost from £500. Decent colour lasers will set you back at least £1,000. Design studios should consider a colour proofer – available from HP and Epson.

Multifunction devices: Companies such as HP and Lexmark offer all-in-one devices that include a printer, scanner, copier and fax. These save desk space, but aren't the best alternative at each of their functions.

Remember to find out the price of **consumables**. An inkjet can get through a cartridge in just a few months. Macworld tests for how many high-colour pages you'll get out of a cartridge, so check our product round-ups.

★★★/6.5	**Wireless Mouse**, Apple, *0800 039 1010*, £59. Bluetooth mouse. Lacks a scroll-wheel.	*Dec 2003*
★★★★/8.8	**Wireless Optical Desktop Elite Executive Edition**, Microsoft, *0870 207 7377*, from £99. All-singing, all-dancing keyboard.	*Jan 2004*
★★★★/8.9	**Wireless Optical Mouse 2.0**, Microsoft, *0870 207 7377*, £39. Super-smooth scrolling; scrolls sideways; three-buttons.	*Jan 2004*

PDAs

Personal digital assistants and related third-party hardware and software.

★★★★/8.0	**Clie PEG-NX70V**, Sony, *020 7365 2947*, £527. PDA offering stereo sound, and Memory Stick and CompactFlash slots.	*May 2003*
★★★★/7.5	**Tungsten E**, Palm, *0118 927 8700*, £149. Affordable, no-frills PDA with SD-card slot	*Expo 2003*
★★★★/8.7	**Tungsten T3**, Palm, *0118 927 8700*, £329. Bluetooth-compatible PDA with big screen and multimedia capabilities.	*Expo 2003*
★★★★/8.0	**Zire**, Palm, *0118 927 8700*, £88. Inexpensive PDA with rechargeable batteries.	*May 2003*

PRINTING

Inkjets, lasers, workgroup, thermal wax, dye sublimation, solid ink and software solutions.

All-in-one printer, scanner, copiers *(All prices include VAT).*

★★★★/8.9	**PSC 1205**, Hewlett-Packard, *08705 474 747*, £99. Compact, affordable, relatively fast all-in-one offers good quality photos.	*Sept 2003*
★★★★/8.9	**PSC 2175**, Hewlett-Packard, *08705 474 747*, £169. Fast all-in-one with six-ink option for even better photo quality.	*Sept 2003*
★★★/6.8	**Stylus CX3200**, Epson, *0800 200 546*, £149. All-in-one printing, scanning and faxing.	*Jan 2003*
★★★★/7.4	**x1150**, Lexmark, *0870 444 0044*, £79. Affordable, good-looking but very slow all-in-one.	*Sept 2003*
★★★★/8.2	**x5150**, Lexmark, *0870 444 0044*, £129. Affordable, good-looking but slow all-in-one.	*Sept 2003*

Consumer/entry-level pro *(All prices include VAT).*

★★★★/8.0	**450CBi**, Hewlett-Packard, *08705 474 747*, £249. Aimed at laptop owners, this printer is portable and versatile.	*Jan 2003*
★★★★/8.3	**DeskJet 5150**, Hewlett-Packard, *08705 474 747*, £89. A4 inkjet that excels at colour photos; optional six-colour cartridge.	*Nov 2003*
★★★★/8.9	**i450**, Canon, *08705 143 723*, £99. Low-price colour A4 inkjet that outputs great quality for the price.	*Sept 2003*
★★★★/8.6	**i470D**, Canon, *08705 143 723*, £179. A4 inkjet that outputs great quality, and includes memory-card reader.	*Sept 2003*
★★★★/8.9	**i6500**, Canon, *08705 143 723*, £339. Great A3+ photographic output, very fast and quiet.	*Sept 2003*
★★★★/7.9	**P706 Photo JetPrinter**, Lexmark, *0870 444 0044*, £69. Affordable but slow.	*Sept 2003*
★★★★★/9.0	**PhotoSmart 7350**, Hewlett-Packard, *08705 474 747*, £199. An A4 inkjet that uses PhotoRet IV technology to great effect.	*Oct 2002*
★★★★/8.0	**S750**, Canon, *08705 143 723*, £159. Colour A4 inkjet offering edge-to-edge printing and impressive photo results.	*Oct 2002*
★★★★/8.7	**S900**, Canon, *08705 143 723*, £329. Edge-to-edge colour A4 inkjet that's fast and outputs decent colour.	*Oct 2002*
★★★★/8.7	**S6300**, Canon, *08705 143 723*, £379. Colour A3+ inkjet offering easy-to-achieve colour accuracy and economic ink usage.	*Oct 2002*
★★★★/8.3	**Stylus C60**, Epson, *0800 200 546*, £79. This entry-level 1,400dpi model is slow – but offers stunning output for your money.	*Oct 2002*
★★★★★/9.0	**Stylus C42UX**, Epson, *0800 200 546*, £59. Slow, but offers spectacular colour quality for the price.	*Oct 2002*
★★★★/7.7	**Stylus C80**, Epson, *0800 200 546*, £149. Entry-level 2,800dpi model that uses pigment inks for better output on plain paper.	*Oct 2002*
★★★★/8.3	**Stylus Photo 890**, Epson, *0800 200 546*, £169. Quality edge-to-edge A4 colour inkjet that's also fast.	*Oct 2002*
★★★★/8.7	**Stylus Photo 895**, Epson, *0800 200 546*, £179. Same as the 890 but with extra features for digital photographers.	*Oct 2002*
★★★★/8.9	**Stylus Photo 830U**, Epson, *0800 200 546*, £99. A photo printer for £99 is a great deal – especially when output is outstanding.	*July 2003*
★★★★/8.1	**Stylus Photo 925**, Epson, *0800 200 546*, £249. Doesn't need a computer to print from memory cards.	*Jan 2003*
★★★★/8.6	**Stylus Photo 935**, Epson, *0800 200 546*, £229. Top-quality output, six-colour inks, standalone printing.	*Sept 2003*
★★★★★/9.0	**Stylus Photo 950**, Epson, *0800 200 546*, £379. The edge-to-edge A4 950 can print on CDs, and paper rolls. Classic only.	*Oct 2002*
★★★★★/9.0	**Stylus Photo 2100**, Epson, *0800 200 546*, £599. A3 2,880dpi seven-ink inkjet that offers flawless edge-to-edge colour output.	*Oct 2002*
★★★★/7.6	**Stylus Pro 7600**, Epson, *0800 200 546*, £2,814. Excellent image quality and print speed for a wide-bodied printer	*Feb 2003*
★★★/6.0	**Z65**, Lexmark, *0870 444 0044*, £129. Same unattractive build as the Z55 but with an extra paper-input tray.	*Oct 2002*
★★★★/8.2	**z705 Photo JetPrinter**, Lexmark, *0870 444 0044*, £59. Affordable but very slow.	*Sept 2003*

Professional *(All prices exclude VAT)*

A3 colour lasers

★★★★/7.1	**AcuLaser C8600PS**, Epson, *0800 200 546*, £3,879. Slow yet high-quality graphics-oriented A3+ colour laser.	*May 2003*
★★★★/8.8	**Elite Color 16**, GCC, *020 8380 6870*, £1,399. Bargain-priced, duplexing high-quality colour laser printer.	*Expo 2003*
★★★★/8.7	**C752n**, Lexmark, *0870 444 0044*, £1,879. A4 colour laser that offers decent-quality prints at a fair speed.	*Expo 2003*
★★★★/8.7	**C9500**, Oki, *0800 917 6015*, £4,869. Super-fast A3 laser ideal for the most demanding office environment.	*May 2003*
★★★★★/9.1	**CL30**, Xanté, *0870 742 0802*, £4,249. Feature-laden graphics A3 laser printer that is both speedy and well-priced.	*May 2003*
★★★★★/9.0	**PlateMaker 4**, Xanté, *0870 742 0802*, £4,499. Complex, quality mono laser printer for producing computer-to-plate plates.	*July 2003*
★★★★★/90	**Phaser 6250n**, Xerox, *0870 241 3245*, £1,609. Fast, affordable colour laser printer that offers excellent quality	*Expo 2003*
★★★★/8.4	**Phaser 7700**, Xerox, *0870 241 3245*, £5,520. Speedy, well-priced graphics A3 laser.	*May 2003*

A4 colour lasers

★★★★/8.1	**AcuLaser C1900PS**, Epson, *0800 200 546*, £1,029. Multi-pass model that does well on speed, quality and price.	*May 2003*
★★★★/8.0	**AcuLaser C4000PS**, Epson, *0800 200 546*, £1,749. Single-pass laser that offer great output, but at a high price.	*May 2003*
★★★★/8.3	**C750**, Lexmark, *08704 440 044*, £2,059. Ultra-speedy single-pass laser that's also economical on consumables.	*May 2003*
★★★/6.9	**C5300**, Oki, *0800 917 6015*, £975. Inexpensive single-pass LED printer that sadly produced low-quality prints.	*Feb 2004*
★★★★/7.7	**HL-4000CN**, Brother, *0845 606 0626*, £1,780. Competitively priced single-pass model.	*May 2003*
★★★★/8.1	**HP 2500**, HP, *08705 474 747*, £1,155. Affordable, if slow, multi-pass A4 that offers decent output.	*May 2003*
★★★★/8.8	**LaserJet 3700**, HP, *08705 474 747*, £1,349. Rather expensive A4 colour laser that produces decent prints at a fair rate.	*Feb 2004*
★★★★/8.0	**Magicolor 2350**, Minolta-QMS, *01784 442 255*, £849. High quality at a superb price, but rather slow.	*May 2003*
★★★★/7.3	**Magicolor 3100**, Minolta-QMS, *01784 442 255*, £1,795. A slightly overpriced single-pass laser printer that offers quality output.	*May 2003*
★★★★/8.0	**C5300n**, Oki, *0800 917 6015*, £1,069. Well-priced single-pass A4 laser that's both speedy and of high quality.	*May 2003*
★★★★/8.0	**C7500n**, Oki, *0800 917 6015*, £2,919. Speedy, feature-rich single-pass A4 laser.	*May 2003*

★★★★/7.7 **Phaser 6200n**, Xerox, *0870 241 3245*, £2,010. Speedy, if expensive, single-pass A4 printer. *May 2003*

★★★★★/9.0 **Phaser 8400**, Xerox, *0870 241 3245*, £909. Affordable, excellent-quality A4 printer – and speedy with it. *Feb 2004*

SCANNING

Consumer and professional scanners

Consumer/entry-level *(Prices include VAT. All models USB)*

★★★★/8.2 **CanoScan D2400UF**, Canon, *08705 143 723*, £219. 2,400dpi A4 scanner offering transparency adaptor. *Nov 2002*

★★★★/8.0/8.1 **CanoScan LiDE 20 / 30**, Canon, *08705 143 723*, £59; £79. Ultra-thin entry-level 600dpi and 1,200dpi A4 scanners. *Nov 2002*

★★★★/8.6 **IRISPen II Executive**, IRIS,@ Softline *01883 745 111*, £129. Cheap, accurate pen scanner that works with any application. *May 2003*

★★★★/8.1 **Perfection 1260**, Epson, *0800 220 546*, £79. Basic 1,200dpi A4 scanner offering optional £45 transparency adaptor. *Nov 2002*

★★★★/8.0x **Perfection 1660 Photo**, Epson, *0800 220 546*, £169. 1,600dpi A4 scanner offering a decent software bundle. *Nov 2002*

★★★★/8.6 **Perfection 2400 Photo**, Epson, *0800 220 546*, £199. Capable 2,400dpi A4 scanner with built-in transparency adaptor. *Nov 2002*

★★★★★/9.0 **ScanJet 3500c**, HP, *0870 547 4747*, £79. Great-value OS X-compatible 1,200dpi model. *Nov 2002*

★★★★/8.6 **ScanJet 4670**, HP, *0870 547 4747*, £179. Innovative design; scans slides; easy storage, but cools looks mean a higher price. *Jan 2004*

★★★★/7.0 **ScanJet 8200**, HP, *0870 547 4747*, £449. 4,800dpi resolution; transparency adaptor; USB 2.0. Overpriced. *Nov 2003*

★★★/6.8 **ScanJet 8250**, HP, *0870 547 4747*, £749. 4,800dpi resolution; transparency adaptor; USB 2.0; document feeder. Expensive. *Nov 2003*

Professional

★★★★/7.2 **ArtixScan 1100**, Microtek, *01327 844 880*, £1,408. Overpriced SCSI-2, 1,000dpi, 42-bit A4 scanner. *Expo 2002*

★★★★★/9.0 **ArtixScan 1800f**, Microtek, *01327 844 880*, £1,799. 1,800-x-3,600dpi A4 flatbed giving unbeatable scan quality . *July 2003*

★★★★/8.3 **Expression 1680 Pro**, Epson, *0800 220 546*, £895. Quality USB/SCSI 1,600-x-3,200dpi, 48-bit A4 scanner, but lacking FireWire. *Expo 2002*

★★★★/7.9 **Expression 1640XL Pro**, Epson, *0800 220 546*, £2,219. SCSI/USB 1,600-x-1,300dpi, 42-bit A3 model that lacks FireWire. *Expo 2002*

★★★★/8.9 **PowerLook 1120**, Umax, *0870 906 4400*, £849. FireWire 1,200-x-2,400dpi, 42-bit A4 scanner offers great balance of features. *Expo 2002*

★★★★/7.8 **PowerLook 2100XL**, Umax, *0870 906 4400*, £999. SCSI-2, 42-bit A3 scanner offers modest resolution of 800-x-1,600dpi. *Expo 2002*

★★★★/7.0 **ScanJet 8290**, HP, *0870 547 4747*, £1,449. 4,800dpi; transparency adaptor; 25ppm document feeder; software is Windows-only. *Nov 2003*

★★★★/8.8 **ScanMaker 9800XL** Microtek, *01327 844 880*, £1,748. FireWire/SCSI-2/USB 2.0, 1,600-x-1,300dpi, 48-bit A3 scanner.

Film scanners *(All prices include VAT)*

★★★★/7.8 **SmartScan 2700**, SmartDisk, *01252 530 960*, £189. Easy to use, inexpensive 2,700-pixel USB film scanner. *July 2003*

★★★/6.7 **SmartScan 3600**, SmartDisk, *01252 530 960*, £189. 3,600-pixel FireWire film scanner that suffers from limited dynamic range. *July 2003*

★★★★/8.0 **Dimage Scan Dual III**, Minolta, *01908 200 400*, £299. 2,820dpi Film scanner offering excellent dynamic range and colour fidelity. *July 2003*

★★★★/8.5 **Dimage Scan Elite II**, Minolta, *01908 200 400*, £549. 2,820dpi FireWire film scanner with Digital ICE and GEM technologies. *July 2003*

If you need to get printed images into your Mac, but you don't have a digital camera or want to put your old photos on the Web, you need a scanner. Before buying a scanner you must consider the final output you're aiming for. If your job is for a glossy magazine, then a high-resolution drum scanner is what you need.

It's more likely, though, that that kind of scanning would be done by a pre-press house or a bureau. Some **high-end** flatbed scanners are actually approaching drum-scanner quality. Some professional scanners require a SCSI interface, so new Macs will require that a SCSI card be added. However, manufacturers are now adding FireWire and USB 2.0 interfaces to their top scanners.

You can buy a dedicated **slide scanner** or attach an optional slide tray to your flatbed. Some scanners have neat internal trays for ease of use.

If your needs are less great, there are many fair-quality **low-end** scanners at unbelievably cheap prices. Again, claims for quality are often based on resolution. Look at the optical resolution rather than the interpolated resolution, as interpolation is just a process of digitally enlarging the scan. Make sure that the connection (USB, SCSI or FireWire) is right for your Mac. Scanners often come with bundled software to let you manipulate the images once you have scanned them.

STORAGE & UPGRADES

Hard drives, CD, DVD, removable solutions, servers, and processor-upgrade cards

Servers

★★★★/8.0 **Xserve**, Apple, from £2,399 including VAT. Apple's easy-to-manage enterprise server is well-placed to compete with PC solutions. *Oct 2003*

Network Attached Storage

★★★★/8.5 **Max**, CMS, *01256 681 246*, from £1,999. Fast and robust storage that's easy to use. *Jan 2003*

Hard drives

★★★★/8.2 **ABSplus**, CMS, *01256 681 246*, from £209. Portable FireWire backup solution. *Jan 2003*

★★★★/8.8 **Big Disk 800**, LaCie, *020 7872 8000*, from £559. High-capacity FireWire 800 hard drives: 400GB (7,200rpm), 500GB (5,400rpm). *Aug 2003*

★★★★/8.5 **Caviar WD2000**, Western Digital, @ Dabs, *www.westerndigital.com*, £201. Cheap, huge 200GB EIDE drive. *June 2003*

★★★★/8.4 **Cobra 800**, EZQuest @ Channel Dynamics, *0870 60 70 540*, from £245. 7,200rpm FireWire 800 hard drive: 120/200/250GB. *Aug 2003*

★★★★/8.5 **Crossfire 120GB**, SmartDisk, *01252 530 960*, from £153. FireWire/USB 2.0 hard drive. Compact, good software, but not too speedy. *Expo 2003*

★★★★/8.3 **Desktop Hard Drive**, SmartDisk, *01252 530 960*, from £139. 7,200rpm FireWire hard drive: 80/120GB. *April 2003*

★★★★/8.3 **Fire800**, WiebeTech @ Technical Earth, *020 8450 0303*, from £249. Reasonably priced 120/180/240GB. FireWire 800 drives. *Aug 2003*

★★★★/8.5 **HDD 250**, Iomega, *www.iomega.co.uk*, £309. Fast 250GB FireWire hard-drive. Slow with USB 2.0, though. *Expo 2003*

★★★★/8.8 **Ice Warrior 800**, Box Clever, *01525 240 188*, from £199. Affordable 120/200/250GB FireWire 800 hard drives. *Aug 2003*

★★★★/8.6 **One Touch 250**, Maxtor, *01923 712 448*, £329. Attractive FireWire-only hard drive with decent software bundle. *Expo 2003*

★★★★/8.4 **Personal Storage 5000**, Maxtor, *01923 716 105*, from £189. FireWire.USB backup solution. *Jan 2003*

★★★★/8.0 **PowerPlay Pro**, SmartDisk, *01252 530 960*, from £59. Handy collar-clip-sized 64MB USB storage and music player. *July 2003*

★★★★/8.4 **Rover**, SmartDisk, *01252 530 960*, £59. Radio-controlled USB slide-show remote-control with 32MB of storage *July 2003*

★★★★/8.5 **The Kube 500GB**, Box Clever @ Mac & More, *01525 240 188*, from £599. 5,400rpm FireWire RAID hard drive. Also 400/240GB. *May 2003*

★★★★/8.0 **Xserve RAID**, Apple, £8,999 including VAT. Impressive 2.52TB server-storage solution. *Oct 2003*

External CD/DVD drives (all inc. VAT).

★★★★/8.5 **Bravo Disc Publisher**, Primera, *01789 415 898 or 0870 870 1220*, from £1,700. CD/DVD duplicator that also prints disc labels. *Oct 2003*

★★★★/7.7 **Boa FireWire DVD-RW**, EZQuest @ Channel Dynamics, *0870 607 0540*, £317. DVD-R that offers solid performance. *May 2003*

★★★★/8.6 **d2 FireWire DVD-Rewritable Drive**, LaCie, *020 7872 8000*, £304. Includes CaptyDVD 1 Mac DVD-authoring software. *May 2003*

★★★★/8.6 **Devideon**, Formac, *020 8533 2489*, £304. DVD-R that includes Devideon 2 Mac DVD-authoring software. *May 2003*

★★★★/7.4 **DVD Revo FireWire SuperDrive 4x**, Cyclone, @ CompuB, *0800 018 6625*, £363. DVD-R that offers solid performance. *May 2003*

Card readers (all inc. VAT).

★★★★/7.9 **Media Reader**, Belkin, *00800 2235 5460*, £89 (inc. VAT). Multi-format storage-card reader for dock-equipped iPods. *Expo 2003*

Upgrade cards (all inc. VAT).

★★★/6.9 **PowerForce G4 ZIF 550/220**, PowerLogix, *www.powerlogix.com (see Int'l)*, £259. For beige G3, blue-&-white G3, pre-AGP G4 *March 2003*

★★★/6.8 **PowerForce G4 Series 100 1GHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £630. AGP and Gb Ethernet PMG4s, Cube *March 2003*

★★★/6.6 **PowerForce Dual G4 800MHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £690. AGP and Gb Ethernet PMG4. *March 2003*

★★★/6.5 **PowerForce Dual G4 1GHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £1,030. AGP and Gb Ethernet PMG4. *March 2003*

★★★★/7.5 **Encore/ZIF G4 500**, Sonnet, *www.sonettech.com (see Int'l)*, £259. Beige G3, blue-&-white G3, Pre-AGP G4. *March 2003*

Hard drives: It's easy to add extra internal hard disks to Power Macs, but other Macs are better served with external drives. All new Macs come with FireWire connections, which are much faster than USB.
You can buy portable FireWire hard drives that you can carry around with you, and also larger, faster drives that sit on the desktop. Buy FireWire 800 drives if your Mac has this super-fast port. Go for the fastest rotational disk speed (measured in rpm), and divide the price by the number of gigabytes to find the price per GB. Buy as big as you can now, to save having to buy again later.
Removable disks: Apple has turned its back on the now defunct 1.4MB **floppy** (what do you think email is for?) but you can still add a USB floppy drive for about £60.

Zip drives are still used for backup. The 250MB Zip supports original 100MB disks, and the 750MB model reads and writes 750MB and 250MB disks, and reads all 100MB disks. Despite the convenience of the format, it's relatively expensive and less popular now that most Macs have some kind of optical storage as standard.

Subscribers to Apple's .Mac services (£65 per year) get 100MB of **iDisk** Web storage space, which can be used to quickly move data around the world.

CD/DVD: Optical storage technologies (**CD-R**, **CD-RW**, **DVD-R** and **DVD-RAM**) have become increasingly viable alternatives as prices fall dramatically. While stable and cheap – a blank 650MB CD-R sells for 45p – writing to a CD or DVD-RAM can be slow. CD-R is a write-once technology. But, unlike Jaz and Zip disks, dishing out CDs to friends or clients isn't financially painful. Your best CD choice may be a CD-RW (rewriteable) drive, which is a CD-R drive with the added ability to handle rewriteable media.

DVDs can hold 5.2GB of data, and the drives can read standard CDs. Watch movies on your Mac and play the latest multimedia DVDs. SuperDrive Macs can record DVDs that will play in domestic players. Apple's **iDVD** tool makes Macs so much better than Windows PCs in this regard. **MW**

Andy Ihnatko

Ahead of the curve

'Apple created the iMac, and then suddenly, kitchens all over the world had food browning in brightly coloured George Foreman grills.'

When Apple flops, it flops by thinking too far ahead. In 1996, Apple attempted to get into the video-game/thin-computer market with Pippin. Pippin was a disaster – a complete and utter failure from both a business and a creative standpoint. Pippin looked a lot like a £60 VCR, but it would have cost about 13 times more. On the plus side, though, it would have run about the same number of games. The only truly smart move Apple made throughout the entire development of this product was to shut it down before actually shipping – because if they had, federal troops would have had to intervene, to protect the nation from Apple and to protect Apple from itself.

I also seem to recall that at one stage in Apple's history, it was possible to buy a sailboard with the Apple logo. But apart from Pippin and the sailboard, Apple hasn't produced a single failed product in 20 years.

What about the Newton, you ask? What about it? As of September, more than 30 million Palm OS devices have been sold. The Newton wasn't the first computer to use a pen, but only Apple could have invented the PDA. They quickly understood how to make it work: make it palm-sized, create a whole OS around pen gestures, and focus on intimate, personal software.

Well then – the Mac Portable? Well, obviously there are one or two downsides to a portable computer the size and weight of a concert accordion. But think about why it was so big and heavy: Apple looked at where the portable market was going and gambled that users were no longer interested in having a portable accessory to their desktop computer. They wanted a real Macintosh that could be used at home, in the office, at a conference hotel, and along every vector in between. So the Portable had to have a real keyboard, a comfortable screen, a credible processor, ample storage, and enough battery time to make it worth the trouble. And that's exactly where notebooks are today.

Remember Steve Jobs' NeXT Cube? The only way it made a big splash was when it became an eBay collectible. The 1988 personal computer that relied on Unix and open-source software? That was intimate with local and remote TCP networks? That had an advanced display-graphics engine and eschewed floppy drives for a high-capacity rewritable optical disc? Boy, I wish I had a computer like that.

You see where I'm going here? Apple has an idea ahead of its time, and someone else takes the hint and runs with it. And here we've just been talking about Apple's commercial failures. Apple redefined the standard for computing with the Apple II, and then again with the Mac. It created the iMac, and then all of a sudden, kitchens all over the country had food browning in brightly-coloured George Foreman grills. Companies even tried and failed to sell music online, then Apple creates the iTunes Music Store, and immediately turns the concept into an exciting and competitive business.

Other companies are the Beatles or the Elvis Presleys of technology. They might sell more records, but Apple is the modest delta bluesman who created Rock and Roll in the first place. Nothin' happens until Apple strums the chords and shows everyone else where music is headed. MW

Behind the smile

David Weiss speaks with Susan Kare, designer of the original Mac icons – including the now-famous Dogcow.

In 1983, Susan Kare had both an MA and a PhD in fine arts from New York University. Out of the blue, she got a call from Andy Hertzfeld – a high-school friend who had become a programmer at Apple. He asked whether she would be interested in designing interface elements for a new computer. Intrigued, Kare soon found herself at Apple, working on the original Macintosh.

Her first task was to create icons representing File, Delete, Copy, and a handful of other objects and commands. Kare began by working on graph paper, using one square to represent a pixel. Hertzfeld developed an icon editor that ran on an early version of the Mac, allowing Kare to toggle pixels on and off and view icons at actual size.

The most challenging part was to create metaphors for abstract concepts. Take the Copy command, which she tried to represent with an image of a cat gazing at its own reflection – a 'copycat'. "Visual puns don't work at all," Kare says, "because users shouldn't have to solve puzzles. Icons should function more like road signs than illustrations."

Twenty years later, we're still surrounded by many of Kare's original Mac icons, such as the Lasso and the Grabber. One of Kare's other creations has made a recent comeback – Chicago, the system font she designed for the first Mac, now graces Apple's iPod.

Happy Mac: The smiling Mac appeared at startup to let users know everything was A-OK. *"This was one of my favourites, because it summarized the problem I had to solve: making a friendlier computer."*

Application icons: The original apps took this form, as do the "generic" application icons in OS 9. *"I felt as though applications were active, so I made them diamond-shaped and dynamic so users could immediately distinguish them from files."*

Watch: The timepiece popped up whenever a command took time to carry out. *"I was happy to make a watch, because Macs were more 'modern.' Not like the Lisa, or Xerox computers, which used an hourglass."*

Irregular-polygon icon: The tool first appeared in the original version of MacPaint. *"This was a hard one; I probably drew 50 different polygons, trying to make one that didn't look like anything."*

The Command symbol: The key bearing this image modifies the keyboard by adding more functions. *"We used the cloverleaf image based on a symbol for 'interesting feature' in Swedish campground signage."*

Dogcow: Originally a hieroglyphic character in the Cairo font, the Dogcow was later used to show page orientation in the Page Setup dialog box. *"I meant this to be a dog, but many people thought it was a cow. Perhaps with a more squared-off nose it would have looked more like a dog."*

Bomb: When this icon appeared on screen, Mac users knew there was a problem. *"Apple told me to come up with whatever I wanted to for this image, and that probably no one would ever see it."*

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